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THESIS

AN ANALYSIS ON THE IMPACT OF THE 1972 ABM TREATY AND ITS AFFECT ON THE PROCUREMENT OF A NATIONAL MISSILE DEFENSE SYSTEM

by

Donald B. McDaniel

March 2002

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For the last thirty years, many strategists have considered the 1972 Anti-ballistic Missile (ABM) Treaty as the foundation for arms control. Others have insisted that its existence perpetuates American vulnerability to a ballistic missile attack. Since its inception, the ABM Treaty has been amended only once, but the geopolitical structure of the world has changed dramatically. The Cold War has ended and many new threats have emerged. The once bipolar world, which is reflected in the treaty, has transformed into a multithreat domain of instability. In response to these new threats, President George W. Bush has indicated that he strongly desires to procure a national missile defense (NMD) system. The terrorist attacks on the Pentagon and World Trade Center indicated that the United States has indeed become a target to extremists who are willing to use weapons of mass destruction (WMD) to harm American citizens. These events also strengthened President Bush's resolve to deploy a NMD system. However, the ABM Treaty acts as a roadblock. This thesis examines the impact of the ABM Treaty on the procurement of a NMD system and investigates the treaty's current utility.

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ABSTRACT

For the last thirty years, many strategists have considered the 1972 Anti-ballistic Missile (ABM) Treaty as the foundation for arms control. Others have insisted that its existence perpetuates American vulnerability to a ballistic missile attack. Since its inception, the ABM Treaty has been amended only once, but the geopolitical structure of the world has changed dramatically. The Cold War has ended and many new threats have emerged. The once bipolar world, which is reflected in the treaty, has transformed into a multithreat domain of instability. In response to these new threats, President George W. Bush has indicated that he strongly desires to procure a national missile defense (NMD) system. The terrorist attacks on the Pentagon and World Trade Center indicated that the United States has indeed become a target to extremists who are willing to use weapons of mass destruction (WMD) to harm American citizens. These events also strengthened President Bush's resolve to deploy a NMD system. However, the ABM Treaty acts as a roadblock. This thesis examines the impact of the ABM Treaty on the procurement of a NMD system and investigates the treaty's current utility.

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I. INTRODUCTION

A. PURPOSE

The purpose of this research is to examine the 1972 Anti-ballistic Missile (ABM) Treaty between the Union of Soviet Socialist Republics and the United States of America and explore its impact on the procurement of a national missile defense (NMD) system. It will examine the treaty's utility with respect to changes in the geopolitical structure of the world and new emerging threats. The goal of this research is to determine whether or not the United States should continue to recognize the thirty-year-old agreement or abandon it, as President Bush is proposing, to procure a NMD system.

B. BACKGROUND

Nuclear proliferation has created a constant tug of war between the United States and the former Soviet Union. Each nation desired to establish a strategic nuclear advantage from the onset of the Cold War. The primary focus has been on the development of offensive weapons of mass destruction (WMD). However, during the 1950's and 1960's, both nations sought to create defensive weapons to protect national interests as well. It became apparent that the production of new defensive systems would be very costly and create the need for additional offensive weapons to counter the defensive advances. In an attempt to extinguish the probable "defensive" arms race that might develop, both nations sought to reach an agreement to deter further expansion of their nuclear arsenals.

Representatives from the U.S. and U.S.S.R. met on several occasions between 1968 and 1972 to reach a diplomatic understanding on numerous defense issues and put an end to the ongoing offensive arms race. These talks became known as the Strategic Arms Limitation Talks (SALT). Finally, in March of 1972, Premier Leonid Brezhnev and President Richard Nixon met in Helsinki and signed an agreement that halted further development of defensive missile systems and placed limitations on the production of offensive weapons.

The Anti-ballistic Missile Treaty attempted to calm the tension between the two countries. Its premise was to prevent further development, testing, or deployment of ABM systems beyond those agreed to within the treaty. Its purpose was to foster a peaceful coexistence between both countries by accepting the notion of mutually assured destruction (MAD). The fear of being destroyed by a counter attack served as the driving force behind not initiating a first strike. By eliminating the prospect of deploying of full-scale missile defense systems, the U.S. and U.S.S.R. left themselves vulnerable to nuclear destruction. This vulnerability was to serve as a deterrent for launching a first strike and ultimately, to prevent a nuclear confrontation between the two countries.

Since 1972, the geopolitical structure of the world has altered drastically. The Soviet Union no longer exists and the Cold War has ended. A once bipolar world has evolved into a multi-threat sphere of instability. Several other nations that express hostility toward the United States now possess ballistic missile capability and seek to challenge American interests. This emerging threat has replenished the idea of developing a national missile defense. The ability of a rogue nations or terrorist group launching a nuclear, biological, or chemical attack on the US with a ballistic missile has greatly increased over the last decade. Such an idea once seemed far-fetched. However, the attacks on the World Trade Center buildings and Pentagon have unleashed a torrent of new concerns about protecting Americans from new foes. Congress is now being forced to address the new threats to American security.

President Bush has identified his desire to expand research, development, and testing of NMD as a major goal of his Administration. Opponents of NMD have criticized the Administration for attempting to violate 1972 ABM Treaty. They believe the treaty serves as the backbone for arms control and if it were abandoned, a new arms race would result. Supporters of NMD believe national security is at stake and the ABM Treaty is archaic and should be dissolved. This dilemma fuels the debate about the utility of the ABM Treaty in today's world. The objective of this paper is to determine the utility of the ABM Treaty and whether or not the United States should remove itself from the treaty to procure a NMD system.

C. RESEARCH QUESTIONS

1. Primary

The primary research question of this thesis is: Should the United States continue to recognize the ABM Treaty as is, or is it justified to abandon the treaty in order to develop, test, and deploy a NMD system?

2. Subsidiary

The subsidiary research questions are as follows:

- What were the motivating factors that led the Nixon Administration to negotiate and sign the ABM Treaty on behalf of United States and are they relevant today?
- What were the opinions of Congress about the treaty and what were the underlying goals behind the signing of the ABM treaty?
- How has the geopolitical environment of the world changed since the end of the Cold War and what new ballistic missile threats have emerged?
- How has the technological evolution of National Missile Defense in the United States been impacted by the ABM Treaty and what version is being proposed to meet current threats?

D. SCOPE

The scope of this thesis scope will include: (1) an in depth analysis of the 1972 ABM Treaty (2) evaluate the changes in the geopolitical environment since the end of the Cold War and their relevant impacts on the treaty, (3) conduct an examination of today's ballistic missile threats, and (4) review the current proposed NMD system and its purpose. The thesis will conclude with a recommendation about the utility of the 1972 ABM Treaty given today's potential threats and the United States strategic goal of procuring NMD.

E. METHODOLOGY

The methodology used in conducting research for this thesis consists of the following:

- Conduct a literature search of books, magazine articles, CD-ROM systems, and other library information.
- Conduct an Internet search of data pertaining to the ABM Treaty, current ballistic missile threats, and NMD.

- Utilize the Missile Defense Agency (MDA) to research the proposed development of NMD.
- Review and analyze Congressional documentations and reports that pertain to the following areas:
  - Formulation of the ABM Treaty
  - Goals of the ABM Treaty
  - Current ballistic missile threats
  - United States National Missile Defense
- Evaluate the utility of the treaty by analyzing the empirical data.
- Formulate recommendations based on the analysis of the thesis.

F. ORGANIZATION OF STUDY

Chapter I. Introduction. This chapter identifies the purpose of the thesis and outlines the questions, scope, methodology, and organization that were used for conducting research.

Chapter II. The Origins of the ABM Treaty. This chapter provides a look at the economical, political, and strategic factors that paved the road to signing the 1972 ABM Treaty.

Chapter III. A New World. This chapter examines the drastic changes in the geopolitical face of the world since 1972 and identifies the new ballistic missile threats that have emerged affecting American national security.

Chapter IV. Where Are We Now? This chapter describes the evolution of American NMD programs and identifies the current version that is being proposed for deployment.

Chapter V. Conclusions and Recommendations. This chapter draws conclusions from the answers of the primary and subsidiary research questions, and makes recommendations based the findings.

G. BENEFITS OF THE STUDY

This study will review the question that is currently plaguing the Bush Administration's policy makers concerning continued development, testing, and eventual deployment of a NMD system: should the United States continue to recognize the ABM

Treaty as is, or is it justified to abandon the treaty in order to develop, test, and deploy a NMD system?

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II. THE ORIGINS OF THE ABM TREATY

A. INTRODUCTION

The Anti-ballistic Missile (ABM) Treaty has been considered by many as the foundation for arms control. For nearly thirty years, it has served as the basis for eliminating the production and deployment of large-scaled, nuclear defensive systems by the United States and the former Soviet Union. From a global perspective, the treaty appeared to be a jewel. By signing the treaty, both nations took a step toward preventing nuclear war, agreed to have further arms limitation discussions, and eased tension that had been mounting between the two nations since the Cold War began. In doing so, the United States and the Soviet Union entered a period of détente. However, from the time of its inception, the ABM Treaty sparked a great amount of domestic debate over its utility.

In each of the last three decades of the twentieth century, Congress and policy strategists have argued whether or not the United States should exit from the treaty. Opponents believe that the United States leaves itself vulnerable to a nuclear attack from any nation or foe by not having a legitimate defensive system. Supporters believe that a withdrawal from the treaty would create instability and generate a new arms race. Both sides have strong arguments.

The onset of the new millennium did not curb the debate. In fact, the attacks on the World Trade Center and Pentagon on September 11, 2001 strengthened the resolve of opponents of the treaty. In a recent press conference, President Bush stated:

> The Cold War is over, it's done with, and there are new threats that we face…And I'm going to ask my friend (referring to Russian President Vladimir Putin) to envision a world in which a terrorist thug and/or a host nation might have the ability to develop—to deliver a weapon of mass destruction via a rocket. And wouldn't it be in our nations' advantage to be able to shoot it down? At the very least, it should be in our nations' advantage to determine whether we can shoot it down. And we're restricted from doing that because of the ABM Treaty that was signed in a totally different era. The case is more strong today than it was on September the 10th that the ABM (Treaty) is outmoded, outdated, and reflects a different time. (Bush, Transcript of a Press Conference on October 11, 2001, p.11)

President Bush clearly desires to move beyond the ABM Treaty's confines to deploy a National Missile Defense. Therefore, the United States will be required to validate the President's claims that the treaty is antiquated. To do so, the origins of the treaty must be examined.

This chapter will explain the events that led the United States and Soviet Union to initiate arms control negotiations and ultimately, the signing of the ABM Treaty. It will also identify the United States' primary goal for entering into the treaty and answer whether or not it was achieved by looking at the aftermath of the agreement.

B. THE BIRTH OF THE COLD WAR

On August 9, 1945 the United States dropped its second atomic bomb on Nagasaki, Japan and ultimately brought an end to World War II. Following the war, the United States and Soviet Union emerged as the two super powers of the world. The two nations had allied to defeat the Germans during the war, but maintained two very different approaches to how Europe should be rebuilt during the postwar years.

After the war's end, the Soviet Union utilized Eastern Europe as its sphere of influence while the United States befriended Western European nations. With the backing of the Soviet Union and its military, Communist parties played a major role in the reorganization of Eastern Europe and helped establish the Soviet *bloc*. The United States had escaped the war's destruction and was able to provide economic aid and promoted capitalism in Western Europe. The two different ideologies resulted in developing a rivalry between the United States and the Soviet Union and fostered a mutual mistrust. Winston Churchill described his view of postwar Europe during a speech in Fulton, Missouri, on March 5, 1946:

> From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the Continent. Behind that line lie all the capitals of the ancient states of Central and Eastern Europe. Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest, and Sophia – all these famous cities and populations around them lie in what I must call the Soviet sphere… this is certainly not the liberated Europe we (the Allies) fought to build up. Nor is it one, which contains the essentials of permanent peace. (Churchill, 1959, pp. 996-998)

Churchill's declaration that an "iron curtain" had descended across the continent of Europe marked the beginning of the Cold War.

Until 1949, Western Europe's anxiety over Soviet influence in the East was squelched by the knowledge that the United States was the only nation to possess the atomic bomb. On August 29, the Soviet Union exploded its first atomic bomb and the United States monopoly of advanced weaponry ended. This single event added a more ominous dimension to the threat posed by the Soviet Union. It also meant a new chapter in the Cold War had been born. It became known as the "arms race".

C. THE ARMS RACE

The Soviet Union's development of the atomic bomb further increased the tension between it and the United States. Throughout the 1950's both nations focused on increasing their nuclear capabilities and stockpiled weapons. The goal of each nation was to develop weapons that were superior to the other nation's arsenal. The hope was to achieve nuclear superiority and prevent a first strike from the inferior nation out of fear of a receiving a devastating retaliation. This policy of discouraging an attack by fear of a counterattack became known as *deterrence*.

As the arms race progressed, new and more powerful weapons were developed. In 1952, the United States exploded the first hydrogen bomb. Within a year, the Soviet Union also developed the capability to produce hydrogen bombs. By 1954, the United States had deployed its first nuclear submarine that carried atomic missiles. This had strategic significance because it meant that the United States' ability to forward deploy its nuclear offensive weapons was greatly enhanced. In 1956, the United States began flying U-2 spy aircraft over the Soviet Union to take aerial photographs and to track its nuclear developments. In 1957, the U-2 flights revealed that the Soviet Union had increased its own capabilities by developing intercontinental ballistic missiles (ICBMs) at two locations, Tyuratam and Plesetsk. (Litwak and Wells, 1987, p. 16) This discovery meant the Soviet Union was able to impact targets around the globe.

The Japanese had successfully attacked Pearl Harbor in 1941; however, no foreign nation had directly attacked the continental United States since the War of 1812. Protected by two oceans, the United States had been isolated from hostile attacks during both world wars. The Soviet Union's newly founded capability of striking the United States caused apprehension and led to intelligence reports that provided worst-case predicaments, rather than hard facts. One intelligence analyst stated, "to the American Air Force, every flyspeck on a film was a missile". (Prins, 1982, p. 90) The notion that the Soviet Union could conceivably launch a nuclear missile from its own soil and strike the United States also had a powerful impact on decision making during the Eisenhower Administration.

The Central Intelligence Agency (CIA) was responsible for the provision of National Intelligence Estimates (NIE's) that reflected the findings of various civilian and military intelligence offices. (Garthoff, 2001, p. 44) Several NIE's in the late 1950s projected the Soviet missile program might surpass that of the United States. Analysts estimated the Soviet Union would have 35 ICBMs by mid-1960 and nearly 200 by the end of 1961. (Ungar, 1992, p. 118) Initial ICBM plans in the United States had been limited to less than 40 missiles. However, the anxiety created by the estimated Soviet build up, led President Eisenhower to approve the development of a nuclear force before he left office that exceeded 1000 missiles. (Ungar, 1992, p. 119)

The rivalry continued to grow during the early 1960's. Shortly before President Kennedy took office, Soviet leader Nikita Khrushchev delivered a speech that appeared to be aimed at the oncoming American administration. In his speech, Khrushchev promised Soviet support for "wars of national liberation"-referring to Cuba and Vietnam. (Garthoff, 2001, p. 132) During his inauguration address two weeks later, President Kennedy responded by telling the world that the United States would "pay any price, bear any burden, meet any hardship, support any friend, oppose any foe to assure the survival and the success of liberty." (Kennedy, Transcripts of Inaugural Address, p. 1) Tensions peaked during the "Cuban Missile Crisis" in October of 1962. However, both sides avoided nuclear war when the Soviets agreed to remove their nuclear missiles from Cuba.

By the early 1960's, the United States had spent billions of dollars developing nuclear missiles, including several hundred Minuteman ICBMs and Polaris submarine launched ballistic missiles (SLBMs). Fears of Soviet expansion, created by exaggerated intelligence and hostile rhetoric, had led the United States to establish a nuclear force that contained 1050 missiles. The Soviet Union had come nowhere near where analysts had suspected their nuclear program would end up by the middle of the 1960's. In 1965, the Soviet Union had produced only 225 nuclear missiles. (McNamara, 1986, p. 54) This realization led the President Johnson to alter the course that had been followed by the previous two administrations.

The Johnson Administration believed that the United States had established nuclear superiority, so it could reduce spending:

> Economic and budgetary considerations made it wise to cut the percentage of our GNP and defense budgets going into strategic forces…We decided to halt the Minuteman program at one thousand launchers, to halt Polaris/Poisedon missile submarine program at forty one boats, and to reduce substantially the size of our heavy bombers and air defense capabilities. (Nitze, 1989, p. 286)

The administration also believed that the Soviet Union would not continue to participate in a costly arms race. Secretary of Defense Robert McNamara, in an interview with U.S. News and World Report on April 12, 1965, illustrates this perception:

> The Soviets have decided they have lost the quantitative race, and they are not seeking to engage us in that contest…there is no indication that the Soviets are seeking to develop a nuclear force as large as ours… Our estimates of the Soviet threat have changed since last year. We now estimate that the Soviet program will lag compared with what we previously estimated, and this somewhat reduces our requirements. (McNamara, Interview in U.S. News and World Report on April 12, 1965, pp. 52-56)

The Johnson Administration took a complacent view of its lead in the arms race. Rather than continuing production of ICBMs, President Johnson decided to improve the missiles already in existence. His administration's idea was to increase the number of warheads on each individual missile. This upgrade became known as the multiple

independently targetable reentry vehicle (MIRV) concept. However, its significance was questionable. Henry Kissinger states:

> If both sides were equal, with say, 1,000 missiles with three warheads on each, the side that struck first would be able to send 3,000 warheads against 1,000 targets, with a tempting chance for success. Why increasing warheads would be more stabilizing than multiplying launchers was neither self-evident nor was it explained. (Kissinger, 1979, p. 210)

The Soviets on the other hand, had taken quite a different and aggressive approach. They not only wanted to catch the United States quantitatively, but to eventually surpass its numbers. Paul Nitze, the former Deputy Secretary of Defense, 1967-69, states the Soviet Union desired to "exceed us in the number of strategic missile launchers, and greatly to exceed us in the average throw-weight of the missiles they could launch." (Brennan, 1975, p. ix)

Shortly after 1966, the Soviet Union began a massive build-up of its nuclear force. It increased production of both its land based and sea based weapons. While the United States production leveled off, the Soviet Union had accelerated its development pace to almost 150 new ICBMs per year. This resulted in a drastic shift in the nuclear balance. By 1970, the United States had 1,054 ICBM launchers and 656 SLBM launchers. The Soviet Union had deployed 1,427 ICBM launchers and 289 SLBM launchers, and was still expanding its forces. (Nitze, 1989, p. 287)

It was clear by the end of the 1960's and early 1970's that the Johnson administration had miscalculated and significantly underestimated the Soviet Union's will to compete with the United States in the offensive arms race. The five to one ratio that the United States maintained in the mid 1960's had disappeared by the end of the decade. In fact the United States had become the inferior nation in terms of quantitative measurements of ICBMs. Both nations had the nuclear capability to destroy each other. However, the realization that the Soviets were moving in a direction beyond parity and might eventually achieve a strategic nuclear advantage worried American politicians enough to consider a different approach to stopping further offensive weapon expansion. The transition of nuclear power and fear of a potential Soviet dominance in the arms race,

ultimately, acted as a catalyst for the American government to push for arms limitation talks with the Soviet Union.

D. DEFENSIVE MEASURES

American interest in developing a Ballistic Missile Defense (BMD) system has been prevalent since the postwar years in the late 1940's. The German use of the V-2 rocket during World War II stimulated the U.S. Air Force to consider using ballistic missiles to shoot down enemy missiles. As a result of this notion, the Air Force established two programs in the late 1940's, Thumper and Wizard, to explore the possibility of establishing a BMD. However, the required technology to develop a sound program was still not well established. Rocket propulsion, target acquisition, target tracking, and missile guidance capabilities were primitive and not advanced enough to implement into a productive defensive system at that time. (Carter and Schwartz, 1984, p. 331)

By the middle of the 1950's, significant technological advancements had been discovered that resulted from the investments made in the Thumper and Wizard projects. Specifically, radar implementation greatly improved targeting capabilities. Large early – warning radars could acquire incoming missiles from long distances. Other radars could be used to track specified targets. The tracking information would be used to guide an interceptor missile to destroy the inbound target. From a conceptual standpoint, the development of this process was very important and would serve as the foundation for missile defense and future American defense programs.

Following World War II, the Air Force had been given primary control of the United States nuclear mission. However, the Army sought to derive its own version of a missile defense by redeveloping one of its air defense programs. In 1955, the Army asked Bell Laboratories to develop a different version of the Nike-Hercules system. (Carter and Schwartz, 1984, p. 332) In addition to using it to shoot down Soviet bombers, the Army desired to utilize the Nike-Hercules missiles to target and destroy inbound Soviet ballistic nuclear missiles. The new variant was called the Nike-Zeus system and became the first real attempt at establishing a BMD system. It also spurred a rivalry between Army and the Air Force to gain a stronghold on the BMD mission.

On October 4, 1957, the Soviet Union launched an artificial satellite called Sputnik into orbit around the Earth. This event greatly impacted the American political mindset. Feeling left behind by the Soviet Union, the United States developed a new sense of urgency to expand its space program and missile defense research. The Army was directed to proceed with development of the Nike-Zeus system, while the Air Force was to focus its Wizard program on the continued improvement of radar technology. (Carter and Schwartz, 1984, p. 332) This effort was meant to promulgate BMD research from two separate avenues.

The Army fought feverishly to receive funding to produce and deploy the Nike-Zeus system during the late 1950's. In 1959, the Army proposed to establish 35 local defense centers, 9 forward acquisition radars, and 120 missile batteries. The Army forecasted that it could have the entire program completed by 1969 at an estimated cost of $14 billion. (Enthoven and Smith, 1971, p. 185) However, the Army could not gain the support it needed from the Eisenhower Administration to progress with full-scale production. Secretary of Defense Neil McElroy summarized the administration's perception at that time by stating, "We should not spend hundreds of millions (of dollars) on production of this weapon pending general confirmatory indications that we know what we are doing." (Enthoven and Smith, 1971, p. 185) Instead of proceeding with its deployment plan, the Army received limited congressional funding to continue research and development.

Once the Kennedy Administration entered the White House, the Army hoped that it might have a different perspective and provide the support it desired. To win approval of its program, the Army conducted several tests at the Kwajalein missile range in the Pacific Ocean. It demonstrated the Nike-Zeus system could successfully shoot down a missile by targeting and hitting an airborne American ICBM. (Adams in Carter and Schwartz 1984, p. 333) However, like its predecessor, the Kennedy Administration failed to support the Nike-Zeus program.

The problem with the Nike-Zeus system was that it utilized a slow rocket and mechanically operated radar. The shared concern of both the Eisenhower and Kennedy Administrations was that the Soviet Union could overwhelm the Nike-Zeus system with

its ballistic missiles and still cause massive damage to the United States. Therefore, they believed that spending large sums of money on a slow defense system was a waste because it would be virtually useless against a full scale Soviet first strike.

Realizing that the Nike–Zeus program was on a dead end road, the Army began pushing a new program in 1963 called the Nike-X. Nike-X utilized better technology and attacked some of the problems identified with the Nike-Zeus system. To replace the old and slower rockets, the Army decided to employ a new and faster rocket called the Sprint. (Report by the Office of Technology Assessment, 1985, p. 45) This rocket had a better acceleration rate. Therefore, it had better capability at propelling a warhead into the atmosphere to impact an inbound Soviet missile. And, unlike the mechanically operated radar used by the old missile defense system, Nike-X contained a new electronic radar to track potential targets. This radar, called a "phased array" radar, was capable of scanning the sky much faster than older mechanical radars and was capable of handling more targets. It could also differentiate between decoys and actual warheads by measuring the drag effects on potential targets once they reentered the atmosphere (after being launched from the Soviet Union and traveling through space toward the continental United States). (Carter and Schwartz, 1984, p. 334)

The Nike-X system was capable of providing an adequate missile defense to a targeted area. Thus, defense batteries could be dispersed to protect American cities from Soviet ICBM's. However, it was determined that the Soviets could launch missiles that would travel unimpeded and impact areas outside of the cities. The resulting nuclear fallout would still cause devastating results. To fill this so-called gap, the Army developed the Spartan interceptor missile in 1965. The Sprint rocket had a range of 25 miles and would be used against atmospheric targets. However, the Spartan was capable of traveling several hundred miles. (Report by the Office of Technology Assessment 1985, p. 45) Therefore, it was to be used to destroy targets while they were still in space. The Spartan's mission was to supplement the Nike-X system and fill the gap. The combination of the two provided the United States with a feasible BMD system. Yet, there were different opinions about whether or not it should be deployed.

By 1966, two schools of thought had been developed regarding the rationale of deploying a BMD system. Robert McNamara, the Secretary of Defense for both Presidents Kennedy and Johnson, led the opposition. McNamara explained his view to Congress with the following words:

> …the Soviets have it within their technical and economic capacity to offset any further damage limiting measures we might undertake, provided they are determined to maintain their deterrent against us. It is virtual certainty that the Soviets will act to maintain their deterrent which casts such grave doubts on the advisability of our deploying the Nike – X system for the protection of our cities against the kind of heavy, sophisticated missile attack they could launch in the 1970's. In all probability, all we would accomplish would be to increase greatly both their defense expenditures and ours without any gain in real security to either side. (U.S. Congress, House Committee on Armed Services, Hearings on Military Posture, 90th Congress, 1st session 1967, p. 874)

McNamara believed that by deploying Nike-X, the United States would be fueling the arms race and in the end result, would spend billions of dollars and achieve no real gain.

The Joint Chiefs of Staff strongly disagreed with McNamara's point of view. They believed that the Nike – X system was the first step to defending American cities from a Soviet nuclear attack. In their minds, America was left vulnerable to an attack and had no means to defend itself. If the Soviets launched a first strike, the United States would have to suffer the impacts of a ballistic missile attack without thwarting any of it, unless a BMD system was put into place.

These two different schools of thought finally butted heads in 1966, when the Johnson Administration was discussing its platform for the 1968 budget proposals. The Joint Chiefs of Staff recommended that the United States deploy the Spartan missiles as an area defense for the whole country and the Nike-X system to defend several cities. Initially, the Joint Chiefs of Staff called for 25 cities to be defended by the Nike-X system and with an option to expand it later to 52 cities. (Report by the Office of Technology Assessment, 1985, p. 46) McNamara opposed the idea and argued against any deployment of a defense system. Finally in a meeting on December 6, in Austin Texas, a compromise was reached. After both sides argued their points of view,

President Johnson appeared that he was going to favor the Joint Chiefs of Staff recommendation. Then McNamara suggested that the 1968 budget contain several hundred million dollars for the Nike-X system, but that it would be withheld "pending efforts to explore bilateral, negotiated ABM limitations with the Soviet Union." (Carter and Schwartz, 1984, p. 337) The President accepted McNamara's new proposal.

McNamara's arguments about the arms race weighed heavily on President Johnson. His growing concern over the buildup of offensive weapons led him to seek talks with the Soviets about curbing the arms race and the development of ABM systems. The Soviets agreed to meet in Glassboro, New Jersey in June of 1967. President Johnson and Robert McNamara met with Premeir Aleksei Kosygin, but the talks provided no significant breakthroughs. Johnson concluded that the United States would have to announce its decision to deploy an anti-ballistic missile (ABM) system to generate more Soviet interest in arms limitation talks. In September of 1967, McNamara announced the United States would deploy a limited ABM defense system and renamed it the "Sentinel" program. (Nitze, 1989, pp. 288-290)

Unlike the Joint Chiefs of Staff, President Johnson did not place the onus on new Sentinel program to defend the United States against an all out Soviet attack. Instead, he foresaw a more realistic mission for Sentinel. He believed it would be of more use protecting the United States from a future limited nuclear attack by the Chinese or against an accidental strike. Henry Kissinger stated:

> The Johnson Administration "actively discouraged the notion that the Sentinel ABM had any utility to limit damage from a Soviet attack on the United States. The principal justification put forward in 1967 was not the Soviet threat but the lesser danger from the small force of ICBMs that China might develop in the mid 1970s." (Kissinger, 1979, p. 205)

President Johnson's decision had several implications. First, he agreed to McNamara's desire to halt the deployment of the Nike–X system in an attempt to first meet with the Soviets and discuss arms limitations. This clearly implied he sought to put an end to the Soviet buildup of offensive weapons. When that proved to no avail, President Johnson agreed to the Joint Chiefs of Staff recommendation by announcing the decision to deploy the Sentinel program. This decision indicated that the United States

was serious about defending itself from a nuclear attack. However, by announcing Sentinel as a means to defend the United States against a future Chinese attack, the Johnson Administration did not directly put pressure on the Soviets and force them to counteract the decision to save face. Instead, it left the door open for diplomacy. This implied President Johnson hoped the decision would further entice the Soviets to negotiate arms limitations.

E. SOVIET ABM DEVELOPMENT

During the early 1960's, the United States had several reasons to believe that the Soviet Union was developing its own anti-ballistic missile system. First, German engineers and scientists that escaped to the West had reported that the Soviets were trying to develop a defense system. U-2 flights provided reconnaissance photos that corresponded with the German reports. (Carter and Schwartz, 1984, p. 191) Secondly, intelligence sources had also determined that the Soviets had deployed a network of radars called the Hen Houses. These radars were capable of providing early warning acquisition of ICBMs launched from the United States by tracking them while they traveled above the atmosphere. (Carter and Schwartz, 1984, p. 193) Finally, during a parade the May Day parade in 1964, the Soviets had displayed a missile called the Galosh. It was determined to be an interceptor missile that had a range of several hundred miles. (Carter and Schwartz, 1984, p. 198) All these indicators eventually led Robert McNamara to declare that the United States had "irrefutable evidence" that the Soviet Union was deploying an anti-ballistic missile defense system. (McNamara, 1986, p. 55) Unlike the United States versions, the Soviets were not developing a nation wide system.

By the late 1960's it was determined that the Soviets were constructing a defensive system only around Moscow. It was projected to be fully operational by the early 1970's. The Soviet ABM system, as predicted, was based on the Galosh interceptor. Two Hen House radars were deployed to the northwest of Moscow for early warning. A Dog House radar, used for battle management was deployed to the southwest of the city. The radars were set up to feed information to eight Galosh complexes that contained 16 missile launchers in each. However, by 1968, only four of the complexes

were believed to be operational. (Report by the Office of Technology Assessment, 1985, p. 49)

F. NEGOTIATIONS: SETTING THE STAGE

By the end of 1967, it was becoming increasingly clear to the Johnson Administration that a shift in the nuclear balance was occurring. The Johnson decision to put a ceiling on offensive weapons production had allowed the Soviet Union to catch up to the United States at a rapid pace. Within a short time, it appeared that the Soviets were going even to surpass the United States quantitatively and win a small victory in the offensive weapons arms race. Evidence had also shown that the Soviets were clearly ahead of the United States in the deployment of an ABM system. In the mid-1960s the Soviet Union had drastically advanced its offensive and defensive arsenals, thus greatly expanded its overall nuclear capabilities. These facts were indicators that the Soviet Union was making headway in the Cold War. Ten years earlier, the United States had enjoyed an achieved superiority. However, by the end of the 1960's, this superiority had begun to dissipate.

The strengthening of the Soviet Union and its nuclear capability confronted the Johnson Administration in a serious manner. President Johnson's concern became evident by his determination to meet with the Soviets to discuss placing limitations on each nation's nuclear weapons and putting a stop to the ongoing arms race. At the beginning of his term in office, President Johnson had believed it to be in the economic interest of the United States to curtail the expansion of nuclear weapons. By the end of his tenure, the administration sought arms reductions with the Soviets in the interest of national security.

The task of developing an American national strategy and goals for arms limitations was placed in the hands of the Committee of Principals. This committee was chaired by the Secretary of State and included the Secretary of Defense, the director of Central Intelligence, the chairman of the Joint Chiefs of Staff, the director of the Arms Control and Disarmament Agency, and the chairman of the Atomic Energy Commission.

(Garthoff, 2001, pp. 138-9) Its diverse background allowed for inputs from a variety of different areas of expertise.

In light of Soviet advances and in conjunction with President Johnson's views, the Committee of Principals determined that the United States should push for a freeze on the buildup of strategic offensive nuclear weapons. Specifically, it called for limitations on fixed land based missiles, land mobile ICBMs, intermediate and medium range missiles (IRBMs and MRBMs), and missile launching submarines. It also believed that ABM defensive systems and surface to air missiles (SAMs) that could be converted to ABM use should be addressed. (Nitze, 1989, p. 288) It did not believe that heavy bomber aircraft capable of delivering nuclear weapons should be included. Many of these aircraft were deployed to Europe to establish an American projection of power and to protect our allies. The Committee of Principals chose to leave them out of bounds.

Although the committee agreed which items would be best suited for the pursuit of arms controls, it failed to specify how the limitations or reductions should occur. It did not specify numeric goals, nor did it agree on a means that would be used to verify any agreements that might be made. The two options that had been discussed for the verification process were on site inspections or methods conducted by unilateral means. On site inspections would require inspectors to visually inspect missiles. On the surface, this appeared to be an adequate means to ensure each nation was complying with its agreements. However, it had flaws. First, if a nation desired to, it could produce weapons unknown to inspectors. Second, if hostilities arose between the two nations, missiles could be upgraded in a short period of time by MIRVing them. Finally, there was a question of who would actually comprise an inspection team. Unilateral means generally fell in the realm of a nation's intelligence capability. In other words, the United States would rely primarily on satellites to have eyes on the Soviet Union. Neither option was fail-safe method. For that reason, the committee did not conclude which would be the better choice.

The Joint Chiefs of Staff were not as ambitious as the Committee of Principals in their desire to make an agreement that could limit the United States' effective pursuit of superiority. The idea of nuclear parity was not appealing. Furthermore, they did not

want the defensive discussions to diminish the possibility for deploying an American ABM system. The notion of leaving the United States completely defenseless against a nuclear strike was not a preferred option. In the event that an agreement was eventually made, the Joint Chiefs expressed that it should come in the form of a treaty and should include an exit strategy in case the verification process failed. (Nitze, 1989, p. 288) To this point, the Soviets still had not expressed any real initiative toward arms control talks with the United States. However, in the Fall of 1967, the Soviet eagerness to meet changed.

In September of 1967, President Johnson requested Congress to appropriate 1.2 billion dollars to begin production and deployment of the Sentinel program. Also included in the request was funding for the development of MIRVs on the Minuteman and Poseidon missiles. (Nitze, 1989, p. 290) This development motivated the Soviet Union to have a drastic change of heart. Earlier in the year, Premier Kosygin had stated that ABM systems were for saving lives and he told President Johnson at Glassboro that giving up defensive weapons was absurd. (Kissinger, 1979, p. 208) Now, however, that the United States appeared committed to developing its own defense system, the Soviets expressed a willingness to meet for arms control talks.

The Soviet Union formally invited President Johnson to visit Moscow in October of 1968. Officials in the administration scheduled a press conference for August 21 to announce President Johnson had accepted the invitation and would make the trip. (Nitze, 1989, p. 292) On the eve of the announcement, the Soviet Union sent its army into Czechoslovakia and overtook the country. President Johnson determined that if he made the announcement as planned, it would not indicate disproval of the Soviet invasion. Therefore, to protest their actions, President Johnson cancelled the trip and forfeited his last opportunity to coauthor any arms agreement with the Soviet Union.

On January 20, 1969 President Nixon entered the White House. He was almost immediately confronted with the issue of arms control. On February 17, Soviet Ambassador Anatoly Dobrynin made an official visit to the establish dialogue with the new president. Nixon wasted no time expressing his desire to pick up where Johnson had left off. He told Dobrynin that his administration wanted to have "open communications

with him and the leaders of his government." (Nixon, 1978, p. 369) He also recommended that Dobrynin and Henry Kissinger, the president's National Security Advisor, establish a private channel of communication. Dobrynin agreed and delivered Nixon a seven page note from Moscow that annotated Soviet willingness to move forward on the arms control issue. (Nixon, 1978, p. 370)

In addition to the arms race with the Soviet Union, Nixon had been bequeathed the baggage that the previous administration stirred up in Vietnam. The country was divided on the United States involvement in the war and many politicians were reflecting their constituent's disapproval by calling for cuts in defense spending. As a result, several Congressmen were opposed to further spending on the production and deployment of an ABM system. To appease opponents and to educate himself on the issue, Nixon appointed his Deputy Security of Defense, David Packard, to conduct a review of the program. Upon completion of the study, Packard recommended that Johnson's Sentinel program be continued, but slightly modified. First, he called for some ABM radars to face north and others towards the oceans. This would provide warning from both ICBM and submarine launched attacks. Second, he proposed that more interceptor missiles be designated to defend American Minuteman missiles. Finally, he suggested that fewer missiles be used to protect cities. (Kissinger, 1979, p. 208) Packard believed these changes would provide better security for the United States and seemed less threatening to the Soviets. Ultimately, Packard hoped this would be an easier sell to Congress.

On March 14, President Nixon heeded Packard's advice and announced that he would seek Congressional support for an ABM system called Safeguard. It was actually the Sentinel system with a new name and a few geographical changes. Safeguard would protect twelve defense areas, including four that defended Minuteman missile sites. Nineteen radars would provide coverage of the airspace over the entire country and several hundred interceptor missiles would comprise the system. It was to be operational by 1973. (Kissinger, 1979, p. 209) In an attempt to mitigate criticism from ABM opponents, President Nixon stated:

> The Soviet interest in strategic talks was not deterred by the decision of the previous administration to deploy the Sentinel system – in fact, it was formally announced shortly afterwards. I believe that the modifications we have made in the previous program will give the Soviet Union even less reason to view our defense effort as an obstacle to talks. Moreover, I wish to emphasize that in any arms limitation talks with the Soviet Union, the United States will be fully prepared to discuss limitations on defensive as well as offensive weapons systems. (Kissinger, 1979, p. 209)

It is clear that President Nixon was implying that the Safeguard system would be used as a tool to negotiate with. He realized the Soviets were originally motivated to meet with the Johnson Administration because of their concern over the Sentinel system. Safeguard was meant to serve as Nixon's carrot on a stick. With arms talks on the horizon, Nixon believed the United States needed a full deck of cards to play with. In order to secure a deal that would stop the Soviet offensive buildup, the United States required a means to persuade them. The Safeguard system provided the United States with a limited ability to somewhat thwart a nuclear attack. More importantly, the system would give the United States bargaining leverage. Nixon concedes this point in his memoirs by stating:

> I felt that tactically we needed the ABM as a bargaining chip for negotiations with the Soviets: they already had an ABM system, so if we went into negotiations without one we might have to give up something else, perhaps something more vital. In that sense, we had to have it in order to be able to agree to forgo it. I tried to persuade Congress that what the ABM vote represented was really a philosophical turning point in America's strategic credibility. (Nixon, 1978, p. 416)

Nixon actually had no desire to deploy a missile defense system. His belief was "that without an ABM we would be in a disadvantageous negotiating position." (Nixon, 1978, p. 415) Instead, Nixon wanted to use the Safeguard system as a tool to halt the Soviet production of offensive weapons. He concluded that real stability would not come from a prolonged arms race or the deployment of defensive ABM systems. Nixon thought it was derived from the concept of mutually assured destruction (MAD):

> Absolute superiority in every area of armaments would have been meaningless, because there is a point in arms development at which each nation has the capacity to destroy the other. Beyond that point the most important consideration is not continued escalation of the number of arms but maintenance of the strategic equilibrium while making it clear to the

> adversary that a nuclear attack, even if successful, would be suicidal. (Nixon, 1978, p. 415)

Nixon held that it was imperative that Congress support Safeguard, but could not go public with his reasoning. Doing so, would give the Soviets notice to American negotiating tactics. The arms talks, now called the strategic arms limitation talks (SALT), were scheduled to begin in November. Prior to their onset, Congress had to vote on whether or not to appropriate funds for the Safeguard system.

The Safeguard system was expected to carry the House of Representatives, but the Senate was a different story. It stirred a great debate. Liberals, led by Senator Kennedy, used the vote to vent frustration over Vietnam. They believed the money would be better spent on social programs. Conservatives, on the other hand, supported the President. The vote was finally cast on August 6. The Senate split the vote, 50–50. This meant by law, the Vice President would cast the tie-breaking vote. Spiro Agnew voted in favor of the system, so officially, it passed 51-50. (Nixon, 1978, p. 418) President Nixon had his bargaining chip.

G. SALT AND THE ABM TREATY

The first session of SALT began in Helsinki, Finland on November 17, 1969. The Soviets had chosen Helsinki as their desired meeting place, while the Americans preferred Vienna, Austria. It was decided that both locations would be utilized. Both nations had sent a delegation to handle the negotiations. Each delegation was made up of a variety of individuals that provided technical, military, and strategic expertise. Gerald Smith, the director of the Arms Control and Disarmament Agency (ACDA), led the American team, while Vladimir Semenov, the Deputy Foreign Minister, directed the Soviets. (Garthoff, 2001, pp. 248-250)

The American delegation found itself in a unique predicament. It was under strong domestic pressure to forge an agreement that reduced the Soviet offensive weapons buildup. However, the American approach was to negotiate an agreement that both sides would find pleasing. It was understood that concessions would be required by both nations, but that each should leave the talks feeling as if it accomplished something

productive. The American belief was that in the negotiations, the objective was to arrive at a non-zero-sum outcome, where both sides achieved gains and neither side lost. (Brennan, 1975, p. v)

The Soviet delegation had a completely different point of view. Paul Bennett summarizes the Soviet approach to the negotiations in The Soviet Union and Arms Control: Negotiating Strategy and Tactics:

> They sought to obtain unilateral American concessions by taking no initiative, by demanding concessions in return for negotiating, by semantic infiltration, by rejecting American proposals and holding their position, and by portraying Soviet positions as final. They tried to exchange the least for the most by generating and increasing political pressure, by proposing and making asymmetric horse trades of various sorts, by exploiting American desires for a summit meeting, and by creating a series of artificial deadlines. They attempted to reduce the impact of Soviet concessions by making extreme or high opening proposals, by retracting previous concessions, and by making a window-dressing concession. (Bennet, 1989, pp. 104-105)

The contrasting negotiation tactics and goals were evident during the first meeting and proved to be a bump in the road. No real success was accomplished. However, President Nixon's foresight, regarding the importance having an ABM system to bargain with, appeared to have some validity. The Soviets expressed concern over the fact that the Safeguard system would be used to protect Minuteman missiles, while its Galosh system focused on defending Moscow. They appeared to be willing to discuss limitations on ABM systems. Both sides took a hiatus during Christmas and planned to meet in the spring of 1970. The Soviet interest helped to shape the formulation of an American negotiating strategy for future meetings.

Within the United States government there were different opinions about what offensive and defensive limitations it should pursue. The Committee of Principals had outlined initial guidance for arms negotiations long before the talks actually took place. Now, a variety of different agencies had differing opinions about the stance the United States delegation should take. In an attempt to bring a sense of order to the differing views, four comprehensive options were developed. They were simply called option A,

B, C, and D. (Kissinger, 1979, p. 541) Their breakdown, according to Kissinger, was as follows:

- Option A limited ICBMs (including IRBMs and MRBMs) and SLBMs to the US total of 1,710, and froze the number of bombers (527 for the US and 195 for the Soviets)
- Option B offered the same offensive limitations as Option A. But ABM systems were limited to National Command Authorities (Washington and Moscow) or completely banned
- Option C was the same as B, but added the ban on MIRVs, if the Soviets agreed to on-site inspections
- Option D called for ICBM and SLBM reductions by 100 per year until both sides reached a level of 1,000 by 1978. ABM was limited to NCA or banned. MIRVs were allowed.

The Joint Chiefs of Staff favored Option A. The State Department, ACDA, and the CIA liked Option C. President Nixon and Henry Kissinger favored Options C and D. Option B was everyone's second choice. (Garthoff, 2001, p. 257) In three of the four options, the United States was willing to concede its ABM program, if the Soviets would agree to make offensive arms reductions. The only scenario that did not include Safeguard as a bargaining chip was Option A. It was a best-case proposal that called for Soviet offensive arms reductions and avoided the inclusion of defense systems altogether. Soviet acceptance of such circumstances was highly unlikely. President Nixon directed Gerry Smith to offer the Soviets two proposals; Options C and D. (Garthoff, 2001, p. 257)

The two delegations met for the second session of talks in April of 1970 in Vienna. The Soviets did not accept either of the American proposals, but again expressed their desire to negotiate ABM reductions. They did not appear interested in making concessions to their offensive weapons and wanted the American delegation to include bombers that were forward deployed. In an attempt to break out of the apparent stall in progress, the American delegation amended their proposals. The new offer was called the "Vienna Option". It called for the reduction of ICBMs, SLBMs, bombers, ABM systems, and offered limitations on MIRVS pending unilateral verification. (Nitze, 1989, p. 310)

The "Vienna option" had significant implications. It offered concessions of items that were originally off limits. American bombers were once considered nonnegotiable. Now the American delegation offered to make reductions. Also, in the original four options concocted by the United States, MIRV limitations were to be verified by on site inspections. Again, the United States changed its original stance and offered verification by unilateral means. Meanwhile, the Soviets had made no offers of their own and were successfully chiseling away the American bargaining assets. This realization led one member of the American delegation to believe that:

> …the talks were drifting away from their original purpose; the only thing that interested the Soviets was to find ways of curbing our ABM program, without having to make serious concessions of their own on offensive arms. (Nitze, 1989, p. 310)

The third session of talks was again held in Helsinki and began in November of 1970. For the third time the Soviets balked at offensive weapons discussions and were inclined to push for ABM limitations. In December, they actually offered to negotiate a separate ABM treaty. (Nitze, 1989, p. 312) The American delegation declined and the two sides again took a recess.

The two delegations met again in Vienna in March of 1971. In addition to the official negotiations, Henry Kissinger was utilizing the "Dobrynin channel". Both governments were eager to reach an agreement of some sort. For several weeks the two official delegations struggled to gain any progress, while Kissinger and Dobrynin secretly exchanged proposals for an agreement. Gerry Smith and the American delegation were unaware of the back door negotiations that were taking place. So, it came as a great surprise when Kissinger notified Smith that an agreement between the two countries had been decided upon. On May 20, 1971, President Nixon made the following announcement:

> The governments of the United States and the Soviet Union, after reviewing the course of their talks on the limitations of strategic armaments, have agreed to concentrate this year on working out an agreement for the limitation of the deployment of an anti-ballistic missile system. They also have agreed that, together with concluding an agreement to limit ABMs, they will agree on certain measures with respect to the limitation of offensive weapons. (Kissinger, 1979, p. 820)

This was a significant break through, but left work to be done. Both sides had "agreed to make an agreement", but needed to iron out the details. For the next year, both sides traded different versions that reflected their respective desires. Two issues became sticking points that slowed the process of completing a mutual agreement. The two sides agreed that a national defense system would not be permitted. However, one site for a limited ABM would be authorized. The first issue that caused debate was deciding where the ABM site would be located. The Soviets had their system around Moscow and planned to keep it there. The United States wanted to deploy its site to protect Minuteman missiles. It was finally agreed that each nation could have two sites, one protecting the capital and one protecting a missile field.

The second issue that became an area of contention was future technologies. President Nixon instructed the American delegation to seek prohibitions on ABM weapons based on technologies that had not been discovered prior to 1972. However, he did not want the issue to be forced down the Soviet's throats if it would prevent an agreement from being reached. Initially, the Soviets agreed. However, according to Paul Nitze, a member of the American delegation, the Soviets were unwilling to include such a clause in the treaty. Therefore, in the final version of the treaty, Agreed Statement D states:

> …the Parties agree that in the event ABM systems based on other physical principles and including components capable of substituting for ABM interceptor missiles, ABM launchers, or ABM radars are created in the future, specific limitations on such systems and their components would be subject to discussion…(ABM Treaty, Agreed Statement 1 Section D, 1972)

By using the term "created", Nitze states it was understood by both sides that developing and testing such components based on future technologies was not banned or limited. (Nitze, 1989, p. 330) This was contrary to what Nixon had instructed. The American delegation capitulated to the desires of the Soviet Union, who wanted the freedom to explore new and improved technologies.

On May 26, 1972, in Moscow, President Nixon and Leonid Brezhnev signed the ABM Treaty and a five-year Interim Offensive Force (IOF) Agreement that provided ceilings on ICBM and SLBM forces. The ABM Treaty limited each nation to deploying

a maximum of two ABM systems: one to protect the nation's capital and another to protect an ICBM site. Each site was limited to 100 missile launchers and 100 interceptor missiles. The national capital site was limited to six radar complexes, while the ICBM site could have two large ABM radars and 18 smaller radars. The United States chose to deploy its ABM system to protect ICBMs at Grand Forks, North Dakota. The Soviets maintained their system around Moscow.

The IOF Agreement limited the ICBM launchers to those that were in existence or under construction as of July 1, 1972. It also limited SLBM launchers to the numbers that were operational or under construction as of May 26, 1972. The United States had no ICBMs under construction, so its total was 1,054. It also had 656 SLBMs with 54 under construction. The Soviet Union had 91 ICBMs under construction. After their completion, the Soviets had 1,618 ICBMs. They also had 740 SLBMs with 210 under construction. (Brennan, 1975, pp. 7-12) No limitations were placed on MIRVs. The IOF agreement gave the Soviet Union a quantitative advantage.

H. RATIFICATION

The signing of the ABM Treaty was considered as a step in the right direction for the two superpowers. It indicated that the two nations were capable of improving their relations, while still being engaged in a Cold War. It also demonstrated that both countries could set aside their differences in political ideologies for a common good. Because the ABM agreement was in form of a treaty, the United States constitution called for a vote from the Senate, before it could be officially approved.

The mood of the country had shifted to the left in the early 1970's. It was becoming clear that defense spending was not a priority that was exalted by public opinion. Henry Kissinger stated:

> The passionate critique of the war in Vietnam spread to an attack on the defense establishment as a whole; indeed, some saw in an assault on the defense budget a device for forcing an end to the war in Southeast Asia. "Reordering national priorities" from defense to domestic programs was the slogan of the period; it was a euphemism for severe cuts in the defense budget. (Kissinger, 1979, p. 199)

For this reason, the Senate was under considerable pressure to approve the agreement. It was touted as being necessary to improve relations with the Soviets, but also as a means to diminish defense spending. During the Senate hearings, it was gleefully projected that the ABM Treaty would permit a reduction of $650 million in fiscal year 1973 ABM funding requests and an additional $5 billion through 1978. (Congressional Hearing, Committee on Armed Services, 92nd Congress, Second Session, 1972, p. 6) The approval of appropriations for Safeguard in 1969 had passed the Senate by only a single vote. Had the ABM agreement not been reached by the two nations, the Safeguard program would most likely have lost its funding and not been fully deployed as it was designed. There were some members of Congress who still supported the concept of a national ABM system. However, given the climate of the times, the Senate was not in a position to open a lengthy debate about the ABM issue. For that reason, the ABM Treaty was overwhelmingly consented to ratification by the Senate on August 3, 1972, by a vote of 98 to 2. President Nixon officially ratified it on Sept 30, 1972.

I. AFTERMATH

In 1974, the United States and the Soviet Union agreed to a protocol that amended the 1972 treaty. The protocol stated that each nation would be limited to only one ABM site instead of two. It stipulated that the Soviet Union shall not deploy an ABM system around any of its missile sites and the United States would not defend Washington, D.C. The Soviets maintained their system that surrounded Moscow and the United States its system in North Dakota. However, the American system was deactivated in 1976 because it was determined that its benefits did not exceed the costs. The only active ABM system that exists today is the one around Moscow.

In the years that followed the signing of the ABM Treaty, two different schools of thought were given birth. One side supports the treaty and the other opposes it. Each side has its own interpretation of whether or not the treaty was a success. Supporters believe that the treaty has been the foundation for arms control and that it stabilized tensions between the two nations. They believe that without the treaty, a defensive arms race would have resulted. Supporters are also content with the notion that mutual assured destruction is a valid strategy for defense. That is, by having no national defensive

system, each nation is left unable to protect itself from the other. Therefore, supporters believe, the fear of a total retaliation deters both countries from every engaging in a nuclear war.

Opponents of the treaty have quite a different view. They believe that a defensive system would not disrupt the deterrence balance. They also believe that as American technology advanced, the United States would improve its capability of developing a more viable system. They disagree with the mutual assured destruction concept. Furthermore, opponents believe that in the event of limited or small nuclear strike, or an accidental launch, the United States is left completely vulnerable. Opponents and supporters have valid points. However, in order to gauge the success or failure of the treaty from an American point of view, it is necessary to evaluate the primary goal of the United States during arms negotiations and determine if the objective was met.

Prior to the signing of the ABM treaty, the prevailing thought among American politicians was that the arms race needed to be curbed. Both the Johnson and Nixon Administrations sought to engage the Soviet Union in arms talks to ultimately stop their massive buildup of nuclear offensive weapons. The American ABM system, Safeguard, was used as a "bargaining chip" in an attempt to reach an agreement that accomplished the objective of stopping the Soviet offensive weapon expansion.

After two years of arms talks, the ABM treaty was signed and the IOF agreement was made. At the time of the signing, United States had hoped to put an end to the arms race by putting the brakes on the Soviet Union's aggressive nuclear missile program. However, empirical evidence illustrates this goal was not reached. By 1985, the United States had 7,900 missile warheads, while the Soviet Union had 9,300. With respect to missile launchers, the United States had 1,028 ICBM launchers and 648 SLBM launchers. The Soviet Union had 1, 398 ICBM launchers and 924 SLBM launchers. (McNamara, 1986, p. 155) These numbers do not indicate a halt in offensive arms production by either nation. In fact they do not indicate even a gradual decrease. Instead, each side greatly increased its offensive nuclear weapons following the signing of the ABM Treaty and IOF agreement. As early as 1974, one ABM supporter stated:

> To the great disappointment of many of the strongest supporters of the ABM Treaty, its conclusion has not resulted in the noticeable slowdown in strategic offensive weapons programs according to the action-reaction theory. (Rathjens in Report by Office of Technology, 1985, p. 52)

In an interview in 1986, fourteen years after the treaty was established, Richard Perle, the Assistant Secretary of Defense, stated:

> It (Safeguard) was regarded as a bargaining chip because it was believed that we could obtain from the Soviet Union limitations on their offensive forces that would obviate the requirement for American defense. Two things happened since. One is that the Soviet forces grew beyond our most pessimistic expectations under the terms of the 1972 agreement…Secondly, to add insult to injury, the Soviets recognized in 1972 that they were behind in defensive technology and they greatly increased their investment in defensive technology. (Charlton, 1986, p. 114)

Finally, after thirty years of observation, President Bush stated in 2001 that the ABM Treaty is "outdated, antiquated and useless". (Bush, Transcript of Speech on October 11, 2001, p. 11)

In 1972, President Nixon was willing to sacrifice the United States' ability to ever deploy a national ABM system in order to stop the Soviet expansion of its offensive nuclear capabilities. The ABM Treaty was intended to be a stepping-stone on the path of this process. However, it is clear that the ABM Treaty did not accomplish the goal that President Nixon had in mind when he signed it. Both sides increased their nuclear arsenals and the arms race continued.

J. CHAPTER SUMMARY

The redevelopment of Europe following the end of World War II generated two separate spheres of influence. The Soviet Union dominated the east, while the United States influenced the west. The great difference in political ideologies created a great mistrust and rivalry between the two evolving super powers. The end result was the birth of the Cold War.

In 1949, the Soviet Union demonstrated its own capability to produce nuclear weapons. This event forged a new, bi-polar world. During the next two decades, the

United States and the Soviet Union stockpiled weapons attempting to achieve nuclear superiority. The offensive arms race inspired each nation to explore the feasibility of establishing a means to defend itself against a nuclear attack. Both countries developed their own version of ABM systems.

In the early 1960's the Johnson Administration believed that the United States had established nuclear superiority and that the Soviets did not have the will to endure a prolonged arms race. President Johnson scaled back the American production of its nuclear arsenal. Meanwhile, the Soviet Union actually expanded its nuclear force. Once the Johnson administration realized its miscalculation, it became interested in stopping the Soviet buildup through arms talks. The Soviet invasion of Czechoslovakia ended President Johnson's ability to reach an arms agreement.

President Nixon was confronted with the arms control issue almost immediately after entering the White House. He supported the idea of reaching and agreement with the Soviets. Nixon became dedicated to the notion of using the American ABM system, Safeguard, as a bargaining chip to halt the expansion of Soviet offensive nuclear weapons. For two years, an American delegation and Soviet delegation negotiated arms control in what became known as the strategic arms limitations talks (SALT).

Throughout the talks, the Soviets showed no interest in offensive arms discussions. The American delegation made concessions, while the Soviets stalled. The end result was the signing of the ABM Treaty and a separate IOF Agreement. President Nixon agreed to sacrifice any American deployment of a national ABM system with the hopes that agreements produced by SALT would curb Soviet offensive weapon production. Was this goal reached?

Less than fifteen years after the ABM Treaty was signed, the Soviet Union had greatly expanded its nuclear warhead production and ballistic missile capability. The only ABM system that exists still today is the one defending Moscow. Therefore, it may be stated that the end result of the ABM Treaty is as follows: 1) the Soviets maintained their ABM system; 2) they continued to increase their nuclear offensive arsenal; and 3) while the U.S. also continued to increase its offensive weapon arsenal, it gave away the defensive capability it was entitled under the treaty when Congress called removal of the

Safeguard system in 1976. These facts directly oppose the goal that both the Johnson and Nixon Administrations had established.

III. A NEW WORLD

A. INTRODUCTION

By signing the ABM Treaty in 1972, the United States and the Soviet Union embarked on a binding journey that promoted the concept of mutually assured destruction (MAD) for an indefinite period. Both nations intentionally left themselves vulnerable to an attack by the other nation. This agreement was designed to deter each nation from staging a first strike, out of fear of a full retaliation. At that time, this concept appealed to some politicians, including President Nixon, because the Soviet Union and United States were the only two nations capable of launching nuclear missiles that could successfully reach targets on the opposite side of the globe. Time has passed. That scenario has been amended, but the ABM Treaty has not.

The geopolitical structure of the globe has drastically changed since May 26, 1972. The once bipolar world, that contained two spheres of influence separated by the iron curtain, has disappeared. Communism versus Capitalism, and Soviet verses American ideologies no longer shape the premises for strategic policy. Instead, as the Soviet Union fractured and the Cold War died, a new world with asymmetrical threats and unmitigated risks was born. The sovereign Soviet nuclear threat is gone, but a multitude of new emerging threats have appeared on the nuclear playing field.

In 1993, shortly after the demise of the Soviet Union, Les Aspin, the Secretary of Defense, acknowledged that several potentially hostile nations had developed nuclear ballistic missile capability (Aspin, 1993, p. 44). However, the Clinton Administration failed to amend or abandon the ABM Treaty to counter the threat. At the end of the President Clinton's tenure in office, Secretary of Defense William Cohen stated:

> At the dawn of the 21st Century, the United States now faces what could be called a Superpower Paradox. Our unrivaled supremacy in the conventional military arena is prompting adversaries to seek unconventional, asymmetric means to strike what they perceive as our Achilles heel. At least 25 countries now possess-or are in the process of acquiring and developing-capabilities to inflict mass casualties and destruction: nuclear, biological and chemical (NBC) weapons and a means to deliver them. (Cohen, 2001, p. i)

The Bush Administration has tackled this evolving nuclear threat in a much more proactive fashion than its predecessor. President Bush has made homeland security a top priority. He does not want the United States to be vulnerable to a ballistic missile threat from numerous potential adversaries, because of a treaty that represents a different time in history. During a speech at the Citadel on December 11, 2001, President Bush emphasized his views by stating:

> We must move beyond the 1972 Anti-Ballistic Missile Treaty, a treaty that was written in a different era, for a different enemy…America and our allies must not be bound to the past. We must be able to build the defenses we need against the enemies of the 21st century." (Bush, Transcripts of Citadel Speech on December 11, 2001, p. 6)

This chapter will explain how the world has changed since the signing of the ABM Treaty. It will highlight significant events that have impacted the relevance of the ABM Treaty and identify the new ballistic missile threats that have emerged.

B. GEOPOLITICAL CHANGES

In the eyes of the Nixon Administration, the 1972 ABM Treaty made good sense. The United States was determined to connect offensive and defensive arms limitations. By signing the treaty, President Nixon was willing to sacrifice a national missile defense system with the hopes that by doing so, the Soviet offensive arsenal would be constrained through future agreements. By the end of the decade, the Carter Administration had also entered into talks with the Soviets pushing for new limitations during the SALT II negotiations. On the surface, détente was appealing because it nurtured the process of preventing a nuclear war by calling for arms reductions. In reality, the Soviets were continuing to strengthen their nuclear might. By the end of the decade, the Soviets had an ABM system and had significantly increased their offensive capabilities. As illustrated in Chapter II, the initial goal that the United States had of curbing the Soviet offensive threat, was not met throughout the 1970's.

President Reagan took office in January of 1981 and made an early stand against the Soviet Union during his first term. He reversed the policies of his predecessors, what had been dubbed as "military neglect", by increasing the defense budget. In June of

1982, while addressing the British House of Commons, President Reagan indirectly called the Soviet Union an evil empire and stated that American "military strength is a prerequisite to peace". (Reagan, Transcript of Ronald Regan Speech to the House of Commons on June 8, 1982, p. 4) In March of 1983 he announced his Strategic Defense Initiative, popularly referred to as the Star Wars system. Reagan's approach was perceived by the Soviets as threatening and the Cold War appeared to be in full swing. However, when Mikhail Gorbachev took over the leadership of the Soviet Union in 1985, everything changed. Soviet misfortunes in Afghanistan and an ailing economy constrained Gorbachev's ability to espouse Soviet strength. The reality was that the Soviet economy could not support a prolonged buildup to match that of the United States as proposed by the Reagan Administration. As a result, Gorbachev chose a different and unexpected strategy.

Gorbachev's new approach weighed heavily on diplomacy and eventually it eased tensions between the two super powers. This change in policy led to another period of détente. From 1985 to 1988, Reagan and Gorbachev met in Iceland, Moscow, and Washington D.C. to resume arms talks. The two leaders agreed that arms reductions were better than arms production. An agreement was made and both men signed the U.S. – Soviet Treaty on Elimination of Intermediate Range and Shorter Range Missiles. The Senate ratified the INF treaty in 1988. It was the first agreement on nuclear reductions and indicated that Soviet-American relations had greatly improved. It was clear that Gorbachev had strengthened the feeble bridge that notionally spanned between Moscow and Washington D.C. However, no one could have predicted the end result of Gorbachev's impact on the world.

C. THE FALL OF THE SOVIET UNION

When Mikhail Gorbachev became the General Secretary of the Communist Party in the Soviet Union in 1985, he immediately began to change the hard-line Communist course that his predecessors had established and loosened the shackles around his nation's ankles. He called for a new period that embraced *glasnost* (openness) and *perestroika* (transformation). Within the Soviet Union, he established a program of economic, political, and social restructuring. Gorbachev introduced policies that

encouraged limited private ownership and the formation of a market economy. He also relaxed the constraints placed on individual's rights to assemble, free speech, and religion. (Revelations from Russian Archives: Perestroika, 1996, p. 1) Gorbachev was clearly reversing old Communist mantras and grasping western principles.

Gorbachev's push for *perestroika* was also reflected in his approach to foreign policy. In a speech he delivered to the United Nations Assembly on December 7, 1988, Gorbachev shocked the western world by stating he would convert "an economy of armaments into an economy of disarmament." The following remarks reflect his new approach to better relations with the west:

> Today we have entered an era when progress will be based on the interests of all mankind. Consciousness of this requires that all world policy, too, should be determined by the priority of the values of all mankind…It is evident, for example, that threat of force can no longer be, and should not be instruments of foreign policy…Today I can inform you of the following: the Soviet Union has made a decision on reducing its armed forces. In the next two years, their numerical strength will be reduced by 500,000 persons, and the volume of conventional arms will also be cut considerably. By agreement with our allies in the Warsaw Pact, we have made the decision to withdraw six tank divisions from the GDR (East Germany), Czechoslovakia, and Hungary, and to disband them by 1991. All remaining Soviet divisions on the territory of our allies will be reorganized…and become unambiguously defensive. (Gorbachev, Transcript of Gorbachev Speech to the United Nations on December 7, 1988, pp. 1-9)

Gorbachev's speech was an immense deviation from the harsh rhetoric that usually came from Soviet leaders and it had a stunning impact on the world. The December 8, 1988 edition of the New York Times characterized Gorbachev's remarks by stating:

> Perhaps not since Woodrow Wilson presented his Fourteen Points in 1918 or since Franklin Roosevelt and Winston Churchill promulgated the Atlantic Charter in 1941 has a world figure demonstrated the vision Mikhail Gorbachev displayed yesterday at the United Nations. (New York Times, 8 December 1988, p. 34)

Gorbachev's calls for reform were intended to create a change within the Soviet Union that enhanced the living conditions and nurtured the struggling economy. By first reaching outward, Gorbachev hoped he could relieve external tensions and promote

working relationships with other nations. These actions were meant to establish external stability, so he could eventually turn inward and focus on improving the state of the Soviet Union. However, the Soviet dominated nations of Eastern Europe and the Republics that comprised the U.S.S.R. saw Gorbachev's *perestroika* as an opportunity to break away. Gorbachev's reform movement acted as a catalyst that set off a chain of events that forever changed the face of Cold War Europe. In 1989 and 1990, the following events occurred (At Cold War's End: U.S. Intelligence on the Soviet Union and Eastern Europe, 1989-1991, 1999, pp. 26-34)

1989

3 February: Soviet troop withdrawal from Czechoslovakia began.

15 February: Soviet troops leave Afghanistan.

25 April: Soviet forces begin leaving Hungary.

18 May: Lithuania and Estonia declare sovereignty.

29 July: Latvia declares sovereignty.

27 October: Warsaw Pact members endorse right to self-determination.

9 November: The Berlin Wall opens.

3 December: The East German government resigns.

1990

25 February: Lithuania declares independence.

25 March: Estonia declares independence.

4 May: Latvia declares independence.

12 June: Russian Republic declares sovereignty.

16 July: Ukraine declares sovereignty.

27 July: Belorussia declares sovereignty.

23 August: Turkmenistan and Armenia declare sovereignty.

25 August: Tajikastan declares sovereignty.

3 October: German unification.

25 October: Kazakhstan declares sovereignty.

30 October: Kirghizia declares sovereignty.

The events of 1989 and 1990 occurred in a rapid and unexpected fashion. A strong sense of nationalism had resulted from Gorbachev's perestroika. Nations once under Soviet control sought to break all ties with the U.S.S.R. By December of 1991, the Warsaw pact had dissolved; each of the Soviet Republics had declared independence; and Boris Yeltsin was elected President of Russia. Former Ambassador Anatoly Dobrynin described his view of the historical drama that had unfolded:

> I believe that Gorbachev never foresaw that the whole of Eastern Europe would fly out of the Soviet orbit within months or that the Warsaw Pact would crumble so soon. He became the helpless witness to the consequences of his own policy… The Soviet Union that Gorbachev inherited in 1985 was a global power, perhaps somewhat tarnished in that image, but still strong and united and one of the world's two superpowers. But in just three years, from 1989 to 1991, the political frontiers of the European continent were effectively rolled eastward to the Russian borders of 1653, which were those before Russia's union with the Ukraine, (Dobrynin, 1995, pp. 615 and 632)

On December 25, Gorbachev resigned and the Soviet flag on top of the Kremlin was replaced with the Russian Flag. On December 31, 1991, the U.S.S.R. officially ceased to exist under international law. In the end, no shots were ever fired between the two superpowers. Instead, détente prevailed. The Cold War was over.

D. THE TRANSFORMATION OF POLICY

The dissolution of the Soviet Union had a radical impact on American foreign policy. Instead of preparing to fight a war with the former sovereign communist nation, the United States began to aid in the democratization of the New Independent States. By increasing ties with Russia and the other newly formed governments, the United States hoped to promote stability in the region and deter the possibility of increasing the nuclear threat to where it was during the Cold War.

In 1993, President Clinton and Boris Yeltsin signed the Strategic Arms Reduction Talks (START II) agreement. It greatly reduced the number of nuclear warheads that both sides would maintain. By 2003, both sides agreed to have a maximum of 3,500 nuclear warheads and to totally eliminate land based MIRVed missiles. (www.janes.com: *Armed Forces, Russia*, 28 Aug 01, p. 9) Recently, during meetings with Vladmir Putin, President Bush offered to reduce the arsenal to a number between 1,700 to 2,200. Putin later reciprocated with his own offer and was willing to reduce the inventories even further. After returning to Moscow and conferring with his government, Putin offered to reduce the number of warheads to 1,500. (Perez-Rivas, 2001, pp. 1-5)

Tensions between the two sides have clearly dissipated and a new, cooperative relationship has emerged. It is ironic to note that after President Nixon signed the ABM Treaty, the two superpowers offensive nuclear arsenals greatly increased. And now, as the President Bush makes moves toward dissolving the treaty, both the United States and Russia are eagerly pursing reducing their arsenals.

E. NEW EMERGING THREATS

The former Soviet Union is no longer the only nation with offensive nuclear capabilities. Many other nations now have their own nuclear programs and have the ability to threaten the United States. The proliferation of nuclear weapons has continued to occur in virtually every corner of the world during the last two decades. Additionally, most of these countries have developed the capability of launching ballistic missiles. The potential combination of the two has a great impact on the interests of the United States and poses an increasing threat to national security. Additionally, many of the nations that now maintain this capability are willing to sell their ballistic missile and nuclear technology to any one who can pay the price. The main purposes for the sales are to fund their ailing economies. As a result, the United States has to consider two possible threats. First, each nation that is hostile toward the United States and maintains a nuclear and ballistic missile capability must be considered as a direct threat. Secondly, any nation that maintains these capabilities and is willing to sell its technology to interested buyers must also be considered as a threat. This threat may be amplified by including scientists who are willing sell their knowledge and experience to interested nations or terrorist

organizations. Such forms of nuclear proliferation are becoming increasingly worrisome to the Bush Administration.

The events that occurred on September 11 demonstrated that the United States is vulnerable to attacks from extremists who wish to inflict harm on American citizens in order to promulgate their causes. Realizing that victory in a conventional war would be nearly impossible, terrorists are more apt to seek asymmetrical methods for striking against the United States. The success of the September 11 attacks emphasizes this desire. Furthermore, this realization amplifies the reason for concern over nations that are willing to sell their nuclear and ballistic missile technology.

The remainder of this chapter will be devoted to identifying nations that pose the most significant present or near term nuclear threat based on the criteria previously described. It will be broken into four sections based on geographic location: the former Soviet Union, East Asia, South Asia, and the Middle East/North Africa.

1. Former Soviet Union

Since the end of the Cold War, the nuclear forces of the former Soviet Union (FSU) have undergone a face-lift. The following numbers depict the reductions that occurred during the decade after the break up of the Soviet Union:

Nation in 1991	**Nuclear Warheads**	**Nuclear Delivery Vehicles**
Russia	7, 327	2,074
Ukraine	1,512	210
Kazakhstan	1,360	144
Belarus	81	81
Total	**10,280**	**2,509**

Nation in 2000	**Nuclear Warheads**	**Nuclear Delivery Vehicles**
Russia	5,870	1,207

Ukraine	0	0
Kazakhstan	0	0
Belarus	0	0
Total	**5,870**	**1,207**

As depicted by the tables, Russia is now the only nation that maintains a ballistic missile force that includes intercontinental ballistic missiles (ICBM) and submarine launched ballistic missiles (SLBM) weapons. All of the ICBMs have been removed from Ukraine, Kazakhstan, and Belarus. (U. S. Department of Defense, OSD, Proliferation: Threat and Response 2001, p. 55)

The likelihood of Russia and the United States engaging in a nuclear confrontation is very remote. However, a primary concern of the United States is the role Russian entities have played as a supplier to other nations. India, Iran, Iraq, Libya, North Korea, and Syria have all received weapons, equipment, or technology that strengthened their nuclear programs. Recently, Aviation Week & Space Technology reported that Russia had offered to enhance "nuclear cooperation" with India. Russia had stated it would help India produce a nuclear power plant and was working out a deal to sell four nuclear capable Tu-22 Backfire Bombers and the aircraft carrier Admiral Gorshov to the South Asian nation. (Singh, 2001, p. 53) This transaction is an example of Russian efforts to stimulate its economy by selling technology and weapons to willing buyers. The United States is worried that eventually this type of proliferation may lead to hostile nations or dangerous individuals ending up with the ability to strike American soil with ballistic missiles.

2. East Asia

East Asia is significant to the United States for two reasons. First, its nations provide a significant amount of business for American companies. On an annual basis, American corporations conduct more than $500 billion in trade and have invested more than $150 million throughout the region. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 7) The second significant characteristic of East Asia lies in its instability. Political and territorial disputes constantly test the peace

within the region. China has threatened Taiwan on several occasions to dispel any notions it has had of obtaining independence and the Korean Peninsula has remained volatile for years. Both situations conflict with American interests in East Asia. Furthermore, China and North Korea have developed strong nuclear arsenals and depending on their leadership's aggressiveness, stand as potential threats to the United States.

a. China

The United States has identified China as a potential threat since it was declared a nuclear state during the 1960's. However, China's ballistic missile program did not progress as rapidly as that of the Soviet Union. It was not until after the ABM Treaty was signed that China established a credible ballistic missile capability. Throughout the remaining decades of the 20th century, China pushed to expand its technological base and was determined to establish itself as a regional and global military power.

China's leaders have unambiguously linked its national prestige with its military strength. In doing so, they have demonstrated that China has placed a high value on its nuclear capability and utilized it to stiff-arm the United States over disagreements regarding Taiwan's pursuit of independence. In January of 1996, a Chinese official stated to former Ambassador Charles Freeman that China could use military force against Taiwan because the American leaders "care more about Los Angeles than they do about Taiwan." This threat was reemphasized in the February 2000, White Paper " The One-China Principle and the Taiwan Issue." A Chinese official stated:

> If a grave turn of events occurs leading to the separation of Taiwan from mainland China in any name, or if Taiwan is invaded and occupied by foreign countries, or if the Taiwan authorities refuse, sine die, the peaceful settlement of cross Straits reunification through negotiations, then the Chinese government will only be forced to adopt all drastic measures possible, including use of force, to safeguard China's sovereignty and territorial integrity and fulfill the great cause of reunification. (White Paper, 2000, p. 5)

It is clear that as long as the United States supports Taiwan in its struggle for sovereignty, the potential exists for a confrontation. Therefore, China's nuclear arsenal must be considered as a valid current and future threat. More specifically, the

United States must concern itself with China's land based ballistic missiles, submarine launched missiles, and its role as a nuclear supplier to other potential adversaries.

China's ballistic missile program is second only to Russia regarding its overall capability of reaching the United States. For years it has focused on improving the accuracy and range of its missiles. As a result of its technological progress, China is believed to currently have at least 20 CSS-4 ICBMs that have a range of over 13,000 kilometers. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p 15) With this range, the CSS-4 can to be launched from Chinese soil and is able to impact any city in the continental United States. There are also indications that China is attempting to expand its ballistic missile inventory while it continues to modernize its long-range missile program.

According to the Office of the Secretary of the Defense, China conducted successful test flight tests of the DF-31 ICBM during 1999 and 2000. The DF-31 is estimated to have a range of 8,000 kilometers. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 15) In addition to the DF-31, China is developing an even longer-range missile called the DF-41. It is believed to have a maximum range of about 12,000 kilometers. Both missiles are enhanced with solid propellant instead of the older liquid propellant. This change improves the reliability of the missiles. Both missiles may be upgraded with multiple independently targetable reentry vehicles (MIRVs). (Lamson and Bowen, 1997, pp. 266-269) Like the CSS-4, both missiles are capable of reaching targets within the continental United States.

In addition to its ballistic missile arsenal, China also has a single XIA class submarine that is capable of launching nuclear ballistic missiles. It can deploy with 12 CSS-NX-3 missiles that have a range greater than 1,000 kilometers. The Office of Naval Intelligence has stated that China is developing a new class of submarine designated as TYPE 094. (Office of Naval Intelligence, Worldwide Submarine Challenges, 1997; p. 22) The TYPE-094 will carry JL-2 nuclear missiles that are expected to have a range of 8,000 kilometers. The JL-2 missile would allow China to target the United States from operating areas near the Chinese coast. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 15)

China's ability to strike American soil with its nuclear capabilities makes it a direct threat. However, it indirectly threatens the United States by acting as a supplier to willing buyers. Over the last two decades, China has provided ballistic missile and nuclear related technologies to both Asian and Middle Eastern countries. It is highly probable that China has provided nuclear technology to Iran, Libya, North Korea, Pakistan, and Syria. (Jane's Ballistic Missile Proliferation, 2000, pp. 1-7) Furthermore, it has been confirmed that Chinese firms have provided important missile assistance to Iran, Libya, and North Korea. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 17) China's interaction with these nations increases the potential for nuclear ballistic missile proliferation and threatens the security of the United States.

b. North Korea

The Korean War ended in 1953. However, tensions have remained high on the Korean Peninsula since the armistice was signed. North Korean forces remain deployed close to the border and maintain an offensively oriented posture. To counter this aggressive positioning, thousands of American troops stand ready to defend South Korea should the North Korea decide to cross the 38th parallel. In addition to a strong and well-placed army, North Korea maintains a substantial missile capability. This constant and very real threat cannot be ignored.

Over the last two decades, North Korea has conducted extensive research, development, and testing with its ballistic missile forces. Much of its effort was placed on producing SCUD B and SCUD C missiles based on reversed engineering acquired from Soviet technology. (Blanche, 1997, p. 9) As a result, North Korea now has more than 500 SCUD missiles. A more significant concern is North Korea's production of No Dong and Taepo Dong missiles. The No Dong missiles are capable of carrying nuclear warheads and have a range of 1,300 kilometers. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 11) This means that a No Dong missile could reach American forces any where along the Korean Peninsula and on the islands of Okinawa and Japan. The Taepo Dong missiles pose a much more significant threat.

North Korea's development of the Taepo Dong 1 and Taepo Dong 2 (ICBM) greatly enhanced its ballistic missile capability. Both missiles are multi-staged

and have much longer ranges than the No Dong missiles. The Taepo Dong 1 could reach Hawaii, and Alaska. The three stage Taepo Dong 2 could deliver a several hundred kilogram payload anywhere in the United States. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 11) North Korea's production of weapons with these range capabilities demonstrates that it desires to maintain the capability of striking the United States. This reality poses a direct threat to the security of the United States. However, like China, North Korea indirectly threatens the United States as a supplier.

North Korea has demonstrated over the last decade that it is a proliferator of ballistic missile technology. Intelligence reports indicate that North Korea has sold No Dong missile technology to Iran. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 13) It has also sold missile technology to Pakistan, Syria, and Libya. (Blanche, Bruce "Scud Development in North Korea." Janes Intelligence Review & Sentinel Pointer) These exports create two serious problems. First, such activity aids nations receiving the technology to develop their own systems. Secondly, these nations can turn around and sell the technology to third parties. This proliferation cycle poses a threat to American security at home and abroad.

3. South Asia

After the end of World War II, the British Parliament decided that India would be granted sovereignty and that the subcontinent would be divided into two countries: India and Pakistan. The division was based primarily on differing religions. In 1947, the partition took place and religious lines were drawn; the majority of Hindus resided in India and the Muslims controlled Pakistan. However, the creation of the two countries did not result in stability. Many Hindus and Muslims suddenly found themselves living in the wrong country. As a result, the partition generated significant violence in the region. Additionally, there was disagreement about a region filled with water and resources located in the northern part of India called Kashmir. Officially, Kashmir belonged to India. Yet, the majority of people residing in the area were Muslims. The battle between India and Pakistan over Kashmir has transcended time and is the

fundamental reason the two nations are at odds today. Both countries continue to skirmish along the borders and tensions remain high.

Because of their differences, both India and Pakistan have established nuclear programs in an attempt to beef up their defenses against each other. These developments have created instability in the region. Furthermore, the region is known to harbor terrorists. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 21) Proliferation in South Asia degrades regional stability. It is also a potential threat to global stability if nuclear technology were to make its way into the arms of terrorists. This realization could have a direct impact on American security.

a. India

India has established a robust ballistic missile program since 1993. Much of its progress has been based on technological acquisitions from Russia and integrated research with its active space program. As a result of its ambitious research and development, India has established an infrastructure capable of producing solid and liquid propelled ballistic missiles. (U. S. Department of Defense, OSD, Proliferation: Threat and Response 2001, p. 25)

India's short-range missile is called the Prithvi. It is a liquid propelled ballistic missile that has three versions. The Indian Army uses the battlefield version that can carry 1000-kilogram payload 150 kilometers. The Indian Air Force uses the medium range version, Prithvi II. It has a 500-kilogram warhead and a range of 250 kilometers. The third version, called the Dhanush, is being developed for the Indian Navy and will have the same capability as the Prithvi II. All three versions are believed to be nuclear capable. (www.janes.com: *Armed Forces*, *India*, 29 Aug 01, p. 4)

India is also producing longer-range missiles. The Agni 1 has a maximum range of 1400 kilometers and the Agni 2 has reached 2,500 kilometers during a test flight. It is believed that India is developing an Agni 3 with a range of 3,750 kilometers and an Agni 4 that could reach 5,000 kilometers. More disturbing is the claim that India is attempting to manufacture a ballistic missile that could impact a target between 12,000 and 20,000 kilometers from its launch point. (www.janes.com: *Armed Forces*, *India*, 29

Aug 01, p 4) Such a development would directly impact American security, particularly if the technology were to be distributed to extremists who are seeking to harm the United States.

b. Pakistan

Pakistan's ballistic missile program has been established to counter India's missile arsenal. Like India, Pakistan has utilized foreign assistance to develop its nuclear capabilities. It is known that Pakistan has received assistance from both China and North Korea during the last decade to achieve its goals. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 27) It does not have the sound infrastructure that India has developed, so outside help is a necessity to produce nuclear ballistic missiles.

Like India, Pakistan has both liquid and solid propelled missiles. It received help from China developing the solid fueled Hatf I, II, and III missiles ranging from 80 to 300 kilometers. Its Hatf V missile is based off of North Korea's No Dong missile and has a range of 1,500 kilometers. The Ghaznavi missile is similar to North Korea's Taepo Dong missile and can also reach ranges of 1,500-2,500 kilometers. Pakistan does not have any ballistic missiles that could reach the United States or that would be classified as ICBMs. However, it is believed that Pakistan is developing longer-range missiles. (www.janes.com: *Armed Forces, India*, 29 Aug 01, p. 4)

Again, a primary concern for the future is the potential of Pakistan transferring sophisticated nuclear technology into the wrong hands. Pakistan's economic woes provide it an incentive to sell technology in order to fund the continuing development of its defense program. Furthermore, Pakistan appears to be locked in a minor arms race with India. Such a predicament is bad for regional and global stability.

4. Middle East/North Africa

The Middle East and Northern Africa have been significantly troublesome to the United States over the last three decades. The Iranian hostage crisis; the confrontation with Libya during the 1980's; and the Gulf War in the 1990's, are all examples of the

turmoil that has evolved in the region. Differences in ideologies, views of Israel, and the oil market have all contributed to regional instability.

Many Arab nations view modern Western civilization as too liberal. Individual freedoms, human rights, and a democratic form of government, all conflict with the values established by the prevailing ideologies of the region. Furthermore, the United States is criticized for its relationship with Israel and is often accused of showing biased support when confronting Jewish/Arab conflicts.

Additionally, the region's monopoly of petroleum reserves has a direct impact on the global economy. Both Iran and Iraq have demonstrated their desire to dominate the Gulf to control access to critical oil supplies. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 33) Their pursuit of this goal has negatively impacted peace in the region. Finally, the proliferation of ballistic missiles is particularly alarming. For that reason, this section will examine the capabilities of Iran, Iraq, Libya, and Syria.

a. Iran

The relationship between Iran and the United States took a drastic turn in 1979. Many Iranians believed the Shah was embracing the United States and viewed this as bad for Islam. The Shah was eventually forced to leave Iran and Ayatollah Komeini became the new leader. After Komeini took control of the country, anti-American sentiment grew. In November of 1979, Iranian students seized the American Embassy in Tehran and took 50 American hostages. This was a violation of International law, but the Iranian government supported it. The hostages were not released until 1981. The relationship between the two countries still has not been mended as a result of the incident. According to the OSD, a primary goal of Iran is the following:

> "…to limit U.S. influence and presence in the region, especially in the Persian Gulf. Iran recognizes that it cannot match U.S. military power and therefore seeks other asymmetric means to challenge the United States." (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 34)

Because of Iran's extremist views, its ballistic missile capability poses a threat to American security abroad and potentially at home.

Iran has received a significant amount of foreign aid to develop a formidable ballistic missile arsenal since its war with Iraq. China, Libya, North Korea, Russia, and Syria have all contributed to Iran's missile program. Each of these nations has either directly sold weapons to Iran or provided equipment and technology to aid in missile production. (www.janes.com: *Armed Forces, Iran*, 22 Jan 01, p. 4)

During the 1980's, Iran purchased several short-range (300-500km) SCUD B and SCUD C missiles from China, Libya, and North Korea. Through reverse engineering, Iran has developed the infrastructure to produce its own SCUDs. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p 36) It is also working on producing a medium range missile called the Shahab-3. Based on the No Dong missile, the Shahab 3 is the result of a conglomeration of North Korean, Chinese, and Russian technology. It is capable of reaching distances 1,500 kilometers from the launch point. The Iranian Defense Minister has publicly acknowledged the existence of a Shahab 4 and plans for a Shahab 3. Both missiles would be more capable than the Shahab 3 and projected to reach approximately 5000 kilometers. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, pp. 37-38)

It is believed that Iran is seeking to either develop or purchase longer range ICBMs. Based on Iran's cooperation with the nations previously mentioned, such a notion is expected to become a reality in the not too distant future. If Iran does obtain long-range ballistic missile capability, it would threaten American security. Furthermore, the potential for Iran to share or sell its technology with organizations or individuals who seek to harm Americans is very real.

b. Iraq

Iraq has been the focus of a lot of attention since the end of the Gulf War in 1991. Under the cease-fire agreement, Iraq was supposed to cooperate with members of the United Nations Special Commission (UNSCOM) and allow them access its ballistic missiles. The agreement stipulated that UNSCOM would have the onus of

identifying and eliminating Iraq's ballistic missile capabilities. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 38) However, instead of cooperation, the UNSCOM members were met with hostility and deception. In 1998, Iraq began denying inspectors access into the country as required by the United Nation Security Council Resolutions. As a result, the Iraqi government has had no inspections for two years and has been free to rebuild its missile production facilities.

Iraq had a sizeable ballistic missile arsenal prior to the Gulf War. It had purchased over 800 SCUD B missiles from Russia and was using reverse technology to produce its variants called the Al-Hussein (650 kilometers) and the Al-Abbas (950 kilometers). It was also attempting to produce longer ranged missiles. (www.janes.com: *Armed Forces, Iraq,* 12 Jun 01, p. 3) Most of Iraq's arsenal was destroyed during the war or dismantled by UNSCOM. However, it is believed that some of the equipment and technology was being concealed. Furthermore, Iraq is believed to have close to 7,000 nuclear engineers, scientist and technicians who have the acumen to rebuild its program in a short time. (www.janes.com: *Armed Forces, Iraq,* 12 Jun 01, p. 4) Iraq's former director of the nuclear weapons program, Dr. Khadir Hamza, recently reemphasized this point. Dr. Hamza told a Congressional joint task force that when he left the country in 1995, they had redesigned a nuclear missile and he believed that by 2005, Iraq would have at least three operational missiles. (Vlahos, 2001, p. 1) It has also been reported that Iraq and North Korea were jointly building a missile factory in Sudan. (www.janes.com: *Armed Forces, Iraq,* 12 Jun 01, p. 4) It is clear that if left unchecked, Iraq will continue to strengthen its ballistic missile capability and destabilize the region. It will also present a mounting threat to the United States. On December 5, 2001, Congressional leaders, including Senators Trent Lott, Joseph Lieberman, and John McCain, sent a bipartisan letter to President Bush that stated:

> For as long as Saddam Hussein is in power in Baghdad, he will seek to acquire weapons of mass destruction and the means to deliver them…We have no doubt that these deadly weapons are intended for use against the United States and its allies. (Tyler, 2001, p. 3)

c. Libya

Libya's leader Muammar Qadhafi has stirred up trouble in the region for over 25 years. He has not hidden his anti-Western ideology and has promoted terrorism. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 45) He has long been committed to acquiring nuclear and ballistic missile equipment, materials, and knowledge. However, the restraints placed on Libya for its suspected part in the Pan American 103 bombing have hurt its economy. As a result, Qadhafi does not have the resources to acquire the necessary technology.

Libya's current missile arsenal consists of SCUD B's purchased from Russia. It is very likely that if United Nations sanctions are lifted, Libya will again try to acquire longer range missile technology from North Korea or anyone else willing to sell it. Should Libya successfully acquire ICBM classified technology, the continental United States would be at risk. After the U.S. raid on Libya in 1986, Qadhafi stated that if he had missiles capable of reaching New York, he would have launched them. (Qadhafi, Transcript of Qadhafi speech, 18 April 90, p. 8)

d. Syria

Syria does not currently pose a direct threat to the continental United States. However, it considers Israel, the United States' most trusted ally in the Middle East, its biggest adversary. Its harbored dislike of Israel, combined with links to Iran, North Korea, and recently Iraq, make Syria a potential problem for American interests.

Syria has purchased SCUD B and C missiles and has acquired a considerable amount of missile related material from Iran, North Korea, and Russia. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 45) It currently does not possess any nuclear missiles. However, it retains an interest in nuclear technology and has a small Chinese-supplied research reactor. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 43) It may be concluded that Syria's nuclear research and ties with nuclear capable nations make it a potential proliferator and supplier in the years to come.

5. Terrorism

The United States has become a specific target for terrorism over the last two decades. The bombings of the Marine barracks in Lebanon, the World Trade Center in 1993, and American embassies in Narobi and Dar es Salaam were all indicators that organizations were seeking to harm Americans at home and abroad. However, the attacks that utilized commercial aircraft on the Pentagon and World Trade Center buildings on September 11, 2001, signified that that the use of weapons of mass destruction is becoming increasingly real. The Office of the Secretary of Defense reports the following:

> …The proliferation of such weapons raises the possibility that some state or entities within these states (referring to nations listed in this chapter) could provide nuclear, biological, chemical weapons to terrorists …It is possible, however, that groups, especially extremist groups with no ties to particular state, could acquire and attempt to use such weapons in the future. Some groups, especially those motivated by distorted religious and cultural ideologies, have demonstrated a willingness to inflict greater numbers of indiscriminate casualties. (U. S. Department of Defense, OSD, Proliferation: Threat and Response, 2001, p. 61)

The proliferation of ballistic missile capabilities is a very real threat that cannot be overlooked. A recent example of the proliferation problem was reported in a December issue of Time magazine. According to the article, seven men were arrested in Moscow for trying to sell two pounds of uranium 235, the kind of top-shelf radioactive material that can be used to build weapons. (Kluger, 2001, p. 1) Jane's has also reported that Iran has tested ship-launched ballistic missiles. (www.janes.com: *Armed Forces, Iran,* 22 Jan 01, p 5) This gives merit to the notion that such a weapon could be covertly deployed onto a commercial ship and launched several hundred miles off the American coastlines. Furthermore, Iran and many of the nations listed in this chapter have already demonstrated that they wish to challenge the United States in asymmetrical ways.

F. CHAPTER SUMMARY

The face of the world has changed drastically since the signing of the ABM Treaty in 1972. The nation that President Reagan called the "evil empire" no longer exists and the Cold War been over for nearly a decade. A new period of cooperation now

exists between the United States and the nations of the former Soviet Union. However, many new threats have emerged that were not yet born when President Nixon determined that the United States did not need a missile defense system and entered the treaty.

Throughout the world, including the former Soviet Union, East Asia, South Asia, and the Middle East/North Africa, the proliferation of nuclear and ballistic missile capability is occurring at an alarming rate. Nations that destabilize their regions and challenge American interests are developing or modernizing nuclear and ballistic missile programs. The combination of the two is becoming more common and deteriorating global stabilization.

The 21st century has already opened a new chapter in the history book of warfare. Terrorism and asymmetrical attacks pose a current and future threat to the United States. Any nation that has nuclear ballistic missile capability and remains hostile toward the United States has to be considered a threat. Additionally, their ability to supply weapons and technologies to willing buyers also poses a threat. All of the nations mentioned in this chapter meet such criteria. This dilemma was not present in 1972. The once bipolar world has now been replaced by a multi-threat world. The geopolitical structure of the world and ballistic missile threat to the United States has altered with time. The ABM Treaty has not changed to counter these threats. As a result, the United States remains vulnerable to an attack.

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IV. WHERE ARE WE NOW?

A. INTRODUCTION

The ABM Treaty has clearly impacted national strategy regarding the deployment of a NMD system. Throughout the three decades following the signing of the treaty, American policy reflected a strong commitment to adhering to the guidelines established within the context of the treaty. In fact, the idea of procuring a NMD system was placed on the back burner of defense priorities until Ronald Reagan was elected as the 40th President of the United States.

The Reagan Administration brought a new aggressiveness to the political playing field. The idea of allowing the United States to remain completely vulnerable and unprotected from a nuclear attack did not sit well with President Reagan. In 1983, he made the following remarks indicating his desire to drastically change American policy regarding national defense:

> I am directing a comprehensive and intensive effort to define a long-term research and development program to begin to achieve our ultimate goal of eliminating the threat posed by strategic nuclear missiles…Our only purpose-one all people share-is to search for ways to reduce the danger of nuclear war. (Reagan, Transcripts of the Announcement of the Strategic Defense Initiative on 23 Mar 1983, p. 10)

This speech served as the formal introduction of the Strategic Defense Initiative (SDI), which later became dubbed Star Wars. It also marked the Genesis in the evolution of NMD. Since that speech, nearly twenty years have passed and three different presidents have been elected into office. Each president was bequeathed the prospect of being the first to actually deploy a NMD system during the post treaty years. However, all three men, George H. Bush, William J. Clinton, and George W. Bush have had their hands tied because of the constraints established in the ABM Treaty. As a result of domestic and global pressure, all chose to forgo deploying a system and alleviated the potential political backlash. Instead, the mission and architecture of a NMD system was changed to meet the vision of the man in office and limited testing continued. Then the extraordinary events of September 11th occurred. In the wake of that tragic day, the United States appears to be closer now than it has ever been to deploying a NMD system.

This chapter will explain the evolution of NMD from the SDI concept to the present. It will also identify where the current version of the NMD system is in the acquisition process. Finally, this chapter will explain how the current system is constrained by the ABM treaty.

B. THE POST ABM TREATY EVOLUTION OF NMD

In 1972, when President Nixon signed the ABM Treaty, it was becoming evident that Congressional support for a NMD system was declining. This point was verified by the eventual closure of the one ABM site allowed by the treaty after the 1974 Protocol. The site in Grand Forks, ND had been operational for only a short time before Congress decided the costs were too extreme. Missile defense research continued until 1983, but not with generous funding from the government.

After 1983, when President Reagan announced his Strategic Defense Initiative, missile defense became a priority and received significant funding. The Strategic Defense Initiative Organization (SDIO) was established to explore the technological feasibility of producing a NMD system. In 1984, it received less than a billion dollars to fund its programs. By 1987, its appropriations tripled. Furthermore, more substantial research was conducted and a mission was established. Initially, the goal was to develop a system that could counter a large scale Soviet attack. However, the mission was altered as the face of the world and American presidents changed. The following sections will identify the five eras that mark the evolution of NMD.

1. Exploration Period (1984-1987)

Prior to SDI, concepts of missile defense relied heavily on the use of nuclear interceptors to destroy inbound missiles. The older concepts were based on the United States launching a ballistic missile that contained a nuclear warhead and hoping it would directly or collaterally destroy a Soviet missile while it was still airborne. The invention of MIRVs complicated matters because if a Soviet missile contained five warheads, the United States would have to launch as many interceptors. The so-called “exploration

period" of President Reagan's initiative helped the United States to develop different concepts that incorporated improved technology.

The first significant development was the introduction of nonnuclear hit-to kill (HTK) approach to intercepting a missile. The Army had been researching the concept of using non-explosive interceptor as a means for countering enemy missiles. The premise was that if an object moving at fast enough speeds impacted a Soviet nuclear missile, the inbound missile would explode. In 1984, the Army conducted the Homing Overlay Experiment (HOE) and demonstrated that the HTK concept was feasible. After three years of further research, the Army's Flexible Lightweight Agile Guided Experiment (FLAGE) proved HTK could successfully engage a ballistic missile within the atmosphere. (BMDO, The Road to Ballistic Missile Defense from 1983-2007, 2000, p. 18)

The second major developing concept was that which included directed energy weapons (DEW) as a means for thwarting Soviet missiles. The DEW in simple terms can be described as a laser beam. The concept called for a near speed-of-light beam to target the inbound missiles. Ideally the beam would burn up the missiles' electronic components rendering them useless. The hope was that DEWs could engage many targets at a rapid rate and thwart a large scaled attack.

Finally, the exploration period also gave birth to the notion that a successful missile defense program would require a battlefield management, command, control, and communication system. The BM/C3 would act as the "brain" that controlled the NMD infrastructure integrating the various elements of the system. The 1985 Summer Study recommended that funding be allocated for the development of BM/C3. (BMDO, The Road to Ballistic Missile Defense from 1983-2007, 2000, p. 21)

2. Strategic Defense System Phase 1 (1987-1991)

By 1987, the SDIO had developed a blueprint for a NMD system that would utilize the already proven HTK technology. The plan was called the Strategic Defense System Phase I Architecture. It stated that a NMD system would be comprised of six elements: a space based interceptor, a ground based interceptor, a ground based sensor,

two space based sensors, and a battle management system. (BMDO, Fact Sheet 404-00-11, 2000, p. 2) The sensors would identify and track enemy missiles and the interceptors would ultimately be launched to destroy them. The battle management system would be used to mold the counter attack together. It was believed that later phases would utilize DEW technology and compliment the elements of Phase 1.

The primary mission for this system was to significantly degrade a massive Soviet first strike. This would ensure survivability of American forces and generate Soviet uncertainty about the American capability to respond to an attack. The created "uncertainty" was meant to deter the Soviets from ever desiring to launch a first strike. Furthermore, it was hoped that this architecture could be very effective against a limited attack.

A key sticking point to implementing Phase 1 was that it was in conflict with the guidelines set forth in the ABM Treaty. The treaty forbade testing and deployment of space-based systems. Furthermore, ground base interceptors would have to be launched from Grand Forks, ND and would be limited to 100, in accordance with the treaty. This realization generated enormous political debate within the Reagan administration and the Congress.

3. Global Protection Against Limited Strikes (GPALS) (1991-1993)

The dissolution of the Soviet Union greatly reduced the likelihood of a massive nuclear strike against the United States. However, the proliferation of Soviet technology into Third World nations led to the emergence of new threats that were spread geographically throughout the world. This change prompted President Bush to replace the Strategic Defense System Phase 1 program with a system called the Global Protection Against Limited Strikes (GPALS). Its primary mission was to provide protection against a limited strike, accidental launch, and attacks on deployed forces throughout the world. In order to meet the three mission requirements, GPALS was broken down into three separate categories: theater, national, and global.

The theater missile defense (TMD) was given significant attention after Iraq launched SCUD missiles at American forces during the Gulf War. To compensate for

this new emerging threat, Congress appropriated a large increase in funds to support TMD assets. The Army's Patriot and Theater High Altitude Defense (THAAD) systems and the Navy Area Defense system were designated as the most promising programs. (BMDO, The Road to Ballistic Missile Defense from 1983-2007, 2000, p. 26)

The national missile defense architecture was scaled back from the proposed Strategic Defense System Phase 1 version. The smaller sized threat and technological advancements enabled a reduction in the NMD system. The new limited system would utilize long range ground based interceptors that were capable of engaging targets inside and outside of the atmosphere. (BMDO, The Road to Ballistic Missile Defense from 1983-2007, BMDO, 2000, p. 26)

The global missile defense was to be based largely on the newly developed Brilliant Pebbles. Brilliant Pebbles were small (less than 25 kilograms) HTK interceptors that contained their own surveillance and control mechanisms. (BMDO, The Road to Ballistic Missile Defense from 1983-2007, 2000, p. 24) Their small size and cost effectiveness would allow them to be deployed in large numbers. Furthermore, they could be used to augment the TMD and NMD systems. However, the ABM Treaty again presented itself as a big, red stop sign. In order to remain in compliance with the treaty, the United States refrained from full-scale development and deployment of GPALS.

4. Theater Missile Defense Era (1993-1996)

President Clinton drastically altered the Bush plan for NMD. In fact, after Secretary of Defense Les Aspin completed his Bottom Up Review (BUR), he changed the name of the Strategic Defense Initiative Organization (SDIO) to the Ballistic Missile Defense Organization (BMDO) and the requirement for a NMD system nearly vanished. The majority of the NMD programs funds were reallocated to TMD programs. As a result, four TMD programs became the focal points for Congressional appropriation.

The Army's Patriot program and the Navy Area Defense program were designed to provide protection from enemy missiles that remained within the atmosphere. These programs became known as "lower tier" programs. The Army's THAAD program and the Navy Theater Wide (NTW) system were considered "upper tier" programs because

they focused on missiles that exited the atmosphere. In addition to these four core programs, two other systems were explored. The Army's Medium Extended Air Defense System (MEADS) and the Air Force's Airborne Laser (ABL) program also received funding to conduct expanded research. (BMDO, The Road to Ballistic Missile Defense from 1983-2007, 2000, p. 29)

Again, the ABM Treaty proved to be a major roadblock. In addition to intercepting theater ballistic missiles, the upper tier systems could, theoretically, be used for intercepting strategic ballistic missiles. Therefore, their deployment and usage conflicted with terms set forth within the treaty. This notion highlighted the TMD concept and stirred debate about whether or not the United States could deploy TMD systems and still be compliant with the ABM Treaty.

5. "3 + 3" Development and Deployment (1996-2000)

The continued proliferation of ballistic missile and nuclear technology increased the number of nations that could potentially pose a threat to the United States. This realization, supported by (then) former Secretary of Defense Donald Rumsfeld's Report on emerging threats, generated a new interest in NMD. As a result, a new NMD development and deployment plan was established.

The "3+3" program called for three years of development and testing that would culminate with a deployment readiness review (DRR) in 2000. If the decision to deploy the system was made, the plan called for the initial capability to be operational three years later (in 2003). The NMD system was meant to comply with the ABM Treaty by deploying no more than 100 ground based interceptors. However, political controversy regarding potential infringements of the ABM Treaty surfaced as the DRR drew near. President Clinton avoided the heat and postponed the deployment.

C. THE BUSH PLAN: THE CURRENT VERSION OF NMD

The version of NMD that is currently being proposed for procurement is unique, but also encompasses the technologies that were developed throughout the evolution described in the previous section. To fully comprehend the specific elements of the

newest version of NMD, certain scientific vocabulary must be understood. The next section will explain a few important terms to aid in understanding the architecture of President Bush's proposed NMD system. The latter sections will elucidate the projected composition of the system and describe the program.

1. Common Terms

The terms defined and amplified below are consistently used when describing missile defense:

- **Endoatmospheric** - Describes missile flight that is within the atmosphere.
- **Exoatmospheric** - Describes missile flight that exits the atmosphere.
- **Warhead** - The portion of the ballistic missile that is intended to explode or inflict damage, upon impacting the desired target.
- **Reentry Vehicle** - Portions of the ballistic missile that leave the atmosphere and are designed to reenter the atmosphere to fulfill a specific mission. For example, warheads, sub munitions, and decoys that reenter the atmosphere on the down-path portion of the missile's trajectory may be considered as reentry vehicles. Typically, use of the term is meant to describe the warhead of the missile.
- **Penetration Aids** - Chaff or decoys used to aid the successful flight of the warhead.
- **Boost Phase** - This phase describes the launch and initial flight of a ballistic missile. The rocket motor ignites and the missile is propelled into its predetermined trajectory. As the missile leaves its launch point, it maintains a relatively slow speed. However, towards the end of the phase, the missiles will travel at several thousand miles per hour. ICBM's may reach speeds of 15,000 miles per hour. The boost phase for shorter ranged missiles lasts approximately one minute. Longer ranger missiles, such as ICBMs, have a boost time that lasts between three to five minutes.
- **Post Boost Phase** - This phase of flight begins at the end of the boost phase and lasts until the midcourse phase begins. During this phase, powered flight has ended and the reentry vehicles and penetration aids are released on their desired trajectory.
- **Midcourse Phase** – During this phase of flight, reentry vehicles and penetration aids travel along the exoatmospheric portion of the intended trajectory. This is the longest of the phases. For an ICBM, the midcourse phase may last as long as 20 minutes. Simply put, it is the phase in between the post boost phase and the reentry phase of flight.

- **Reentry or Terminal Phase** - During this phase of flight, the reentry vehicles and perhaps penetration aids travel back into the atmosphere. This is a very short phase. The terminal phase of an ICBM may last less than one minute.

2. System Architecture

The new missile defense system, presented by the Bush administration and the Missile Defense Agency (MDA) (BMDO's name was changed to MDA in January 2002), differs from the systems designed to protect the United States that were described during the previous section of this chapter. In fact, the name has even changed. The new system is referred to as the Ballistic Missile Defense (BMD) system instead of NMD. The main reason for the change in name has to do with the overall strategic change in the function of the new system. In previous eras, NMD and TMD were separate entities. Now, the BMD system encompasses previously explored and developed technologies into a layered defense, rather than differentiating between systems. It is also incorporating an evolutionary structure that will allow upgraded technology to replace obsolete weapons. This single integrated BMD system will utilize battle management command and control (BM/C2), sensors, and weapons to engage enemy missiles during the different phases of flight: boost, midcourse, and terminal phase.

The optimal engagement of an enemy ballistic missile would occur during its boost phase of flight. During this phase, the missile is primarily in endoatmospheric flight and typically, is still over enemy territory. Therefore, any explosion that occurs during the boost phase will result in debris falling onto the nation launching the attack. Additionally, the missile is traveling at its slowest speed and presents itself as a larger target than during later phases because reentry vehicles and penetration aids have not separated yet. However, engagement during the boost phase and post boost phase is extremely difficult because it requires immediate detection and reaction by the BMD system.

The midcourse phase offers the most opportunity for an interceptor to strike its target. The BM/C2 would have more time during this phase to predict trajectory and possibly attempt multiple engagements of the hostile target if required. However, penetration aids are most likely to be deployed during the midcourse phase. Such

countermeasures would degrade the ability to properly acquire the warhead and complicate a successful engagement.

The least desirable engagement is during the terminal phase. The terminal phase does not offer a significant amount of time to strike the warhead. During this phase the warhead has reentered endoatmospheric flight and is traveling at high speeds. Furthermore, any debris that results from a successful engagement is likely to fall on friendly territory.

As previously identified, the preferred scenario is for a ballistic missile to be intercepted and destroyed as early as possible. The BMD system will strive to do just that. Because it is designed as a layered defense, BMD will eventually provide opportunities for a ballistic missile to be engaged during all phases of flight. Theoretically, the layered defense should increase the probability of a ballistic missile being intercepted and destroyed before it reaches the United States. However, to date, most of the system's proven technology would be used for terminal defense.

a. Terminal Defense

The terminal defense will provide the last measure of protection during a ballistic missile attack. Yet, it is the segment of the proposed layered defense that has the most realistic chance of being deployed first. Iraqi SCUD launches during the Gulf War provided a catalyst for expedited production of terminal defense assets. Although the PATRIOT had limited success, follow on research was in high demand. As a result, TMD research greatly benefited from increased appropriations during the mid 1990s. Now, the integrated BMD system's terminal defense segment will reap the rewards from advanced research previously conducted. According to the MDA, the primary projects that will be utilized for this segment of the layered defense are the THAAD system and the Israeli Arrow Weapon System (AWS). Additionally, the PATRIOT Advanced Capability-3 (PAC-3), Medium Extended Air Defense System (MEADS), and Navy Area programs are being funded to compliment the THAAD and AWS projects. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 10)

The THAAD system will be used to engage short and medium range ballistic missiles. The system is capable of provided a large area defense and will most likely be used to protect population centers and forward deployed forces. THAAD is also capable of intercepting missiles at high altitudes and long distances away from their intended target. This reduces the probability of suffering collateral damage from falling debris. The program is expected to demonstrate its capability in 2004 and is designed to accept upgrades as they may be developed.

The Israeli AWS has a similar mission to the THAAD system. Testing has been conducted and successfully proved that the system is interoperable with American defense missile systems (PATRIOT and Aegis systems). Therefore, target acquisition and tracking information can be relayed between the different systems. Like the THAAD system, AWS is considered as an upper tier program because it can intercept targets at high altitudes.

The PAC-3 system serves as a dual role defense system that is capable of engaging both aircraft and ballistic missiles. Unlike the previously mentioned systems, PAC-3 is a lower tiered system. Therefore, it will engage targets at lower altitudes. Its strength lies in its demonstrated hit-to-kill capability. During testing, the PAC-3 system successfully destroyed 7 out 8 missile targets. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 11) Additionally, the system is transportable and can be forward deployed with American military units.

The Navy Area Program's (NAP) mission is to provide a sea based lower tier missile defense. Its design is based on the AEGIS air defense system that is currently in use. NAPs are still an infant stage and require further testing. Once operational, the system would allow American ships to travel around the world and provide missile defense in regions that were considered threatening to American interests.

Like the PAC-3 system, MEADS is capable of being forward deployed to protect American forces. It is also a lower tiered missile defense system. Once deployed, it will provide 360-degree coverage against short and medium ranged missiles for maneuvering units. MEADS is designed to use PAC-3 as its interceptor. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 11)

b. Midcourse Defense

The midcourse segment of the layered defense is not yet as developed as the terminal defense segment. The conceptual framework has been established, but development and testing are still required before the segment would be ready for deployment and operational use. The midcourse defense will be divided into two separate elements: Ground-based Midcourse Systems and Sea-based Midcourse Systems. The fundamental purpose of both elements is to intercept ballistic missiles during exoatmospheric flight.

The objectives of the Ground-based Midcourse System are stated to be as follows: 1) to develop and demonstrate an integrated system capable of countering known threats; 2) to provide an integrated tests bed that provides realistic tests and reliable data for further system development; and 3) to create a path allowing for an early capability based on success in testing. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 12) As the complexity of threats increases, the system will evolve to counter the enhancements.

The Ground-based Midcourse System is expected to launch interceptors from multiple designated launch points. During his presentation to the House Armed Services Committee in July 2001, BMDO director Lieutenant General Kadish, did not mention Grand Forks, ND as a launch site. Instead, Fort Greely and Kodiak Island (both are located in Alaska) are designated as the test facilities and are considered as candidates for employment should an immediate requirement arise to meet an emergent threat. Flight-testing from these sites is scheduled to begin in 2002. The tests will include command and control, radar, and sensor integration to defeat airborne targets.

The Sea–based Midcourse System is designed to launch interceptor missiles from forward deployed ships to engage targets during the early stages of midcourse flight. This system, like the NAP, will incorporate technology based on the existing Aegis system. By engaging targets early in the midcourse phase, the Sea-based Midcourse System reduces the overall BMD System's likelihood of being spoofed by penetration aids. Testing of the system is scheduled to be conducted during 2002. It is

projected that the system may be capable of limited operation by 2004. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 12)

c. Boost Defense

The boost defense segment of BMD is probably the most difficult portion of the layered defense to field. Research and testing will play a crucial role in establishing a viable system. The development of high-powered lasers, coupled with assets that allow for quick reaction upon detection of a ballistic missile launch, will be required to alleviate "holes" in the boost defense segment. Ultimately, the system will provide a global capability that protects the United States and its military forces from a missile launch anywhere in the world.

The objectives of the boost defense segment are as follows: 1) to demonstrate and make available the Airborne Laser (ABL) for a contingency in 2004 with a path to an initial capability in 2008; 2) define and evolve space-based and sea based kinetic energy Boost Phase Intercept concepts to support a product line decision in 2003-2005; 3) execute a proof of concept Space-Based Interceptor Experiment (SBX); and 4) provide a path for proof of concept for an Space-Based Laser Integrated Flight Experiment in 2012. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 14) In order to accomplish the four objectives, a significant of amount of testing will be required to establish baselines for kinetic and direct energy weapons.

The kinetic energy concept relies on immediate response to an airborne missile. A HTK interceptor would have to be launched within seconds of the detected missile launch. It would also be required to track and engage a missile that was in the process of accelerating. The MDA hopes to demonstrate such a capability between the 2003 and 2006 period.

The direct energy concept focuses on the production of lasers that are capable of engaging and destroying launched missiles. The benefit of direct energy weapons is the speed in which that can strike the target. Once the target is acquired and an intercept point is calculated, a direct energy weapon will strike it at the speed of light.

An initial flight test of ABL to demonstrate the lethality of the weapon is projected to occur in 2003.

The deployment of the boost phase segment will greatly enhance the overall BMD system. First, and foremost, it will provide a measure for striking launched ballistic missiles over enemy territory. Additionally, the system's cuing ability provided by technologically advanced sensors would augment the midcourse and terminal defense segments. However, as with the other two defense segments, the success of a boost phase defense will require the freedom to test it in an operational mode.

3. Acquisition Strategy

The three largest factors that affect a typical program are cost, schedule, and performance. Programs that stay within budgeted costs, reach milestones on schedule, and perform in accordance with their required functions tend to be successful. The programs that soak up money, fall behind schedule, and do not perform as expected usually fail. In the past, NMD and TMD programs have had their share of cost, schedule, and performance problems. For that reason, LtGen Kadish, the MDA director, has proposed a new and unique acquisition strategy for the procurement of BMD. The thrust behind the new strategy is to mitigate risk, while adopting a capabilities based approach to fielding the BMD system. To do so, LtGen Kadish's acquisition strategy for the layered defense incorporates open architecture, robust testing, and iterative reviews in order to control the cost, schedule and performance variables within the BMD program.

The BMD system that is being proposed does not have a fixed architecture. Instead, it has been designed to evolve as threats and technologies change. The conceptual infrastructure has been developed. And, some of the components of the layered defense (particularly in the terminal defense) will be based on weapons and technology that currently exists. However, much of the system will rely on components that have not yet been developed. Regarding those components, LtGen Kadish states:

> As part of our risk reduction activity, we will explore different technologies and paths. We will also pursue technologies that may be useful across multiple Segments and employ multiple technologies to avoid single point failures in each Segment. We do not want to be in a

> situation, for example, to discover a fundamental design problem in our only Exoatmospheric Kill Vehicle (EKV), or in our only sea- based booster under development. That would amount to a single point failure that could cost years in developing effective missile defenses, not to mention leaving America and our allies unnecessarily exposed. We must be agile in our engineering approaches to keep the BMD program on track and affordable. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 3)

By not relying on sole source component development and utilizing an open architecture approach, LtGen Kadish believes the BMD program will be better equipped in a more time efficient manner. Deciding which technologies are suitable for development and eventual deployment will be based on robust testing.

The primary goal of the BMD test and evaluation structure is to provide meticulous, realistic testing that will determine what technologies are worth pursuing. Developmental testing will focus on determining the performance capabilities of specific systems and identifying potential problem areas. Later tests will require systems to be used in operational modes to determine their effectiveness against complexed threats with countermeasures. Several steps are being taken to enhance the test and evaluation process.

First, there will be range improvements to provide more realistic scenarios. Upgrades will be required in the following areas: software and modeling, airborne instrumentation platforms, launch facilities, target inventories, and range tracking and collection assets. Each upgrade will also help to improve the tempo at which tests can be conducted.

Second, the number of tests conducted will be increased. Older missile defense programs suffered because they lacked funding for proper testing. The BMD program calls for more testing to assess an individual system's functionality and interoperability with other systems. This increase is meant to reduce risk and provide a better analysis to enhance the overall development of the BMD system.

Finally, LtGen Kadish desires to advance the test bed capability. Previous programs ran into airspace restrictions and legality issues based on ABM treaty constraints. The blue prints for the new test bed would include measuring

interoperability between several different locations and will span across the Pacific region that extends from the Marshall Islands to Alaska. Specifically, LtGen Kadish states:

> The new test bed would make use of early warning radars at Beale Air Force Base and Cobra Dane at Shemya Island, and use of the Kodiak Launch Facility in Alaska to launch targets and interceptors. The test bed would continue our practice of integrating early warning cueing information from Defense Support Program satellites and leveraging a battle management system operated out of Colorado Springs, Colorado. The test bed would also include up to five ground-based silos at Fort Greely, Alaska…This test bed will allow us to test more than one missile defense segment at a time and exploit multiple shot opportunities so we can demonstrate viability of the layered defense concept. The test bed will provide a realistic environment to test different missile defense capabilities under varying and stressing conditions. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, pp. 6-7)

To evaluate test results and make development decisions, the new program will include iterative reviews instead of following the typically acquisition process that contains four phases and several milestones. Instead, the BMD program will utilize yearly decision points to determine system status assessments. According to LtGen Kadish, this annual review process will allow for the following: 1) a better understanding of current technologies and the evolving capabilities; 2) evaluation of new and innovative concepts; 3) development of competing technologies to mitigate cost, schedule, and performance risks; and 4) a more complete estimation of total costs for making informed decisions concerning system capability, production, and deployment. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 7)

4. BMD and the ABM Treaty

Since the signing of the 1972 ABM Treaty, the United States has strived to protect its national integrity and complied with the articles and agreed statements set forth within the document. But, it has clearly been a stumbling block on the road to procuring any type of missile defense system since President Reagan first proposed his Strategic Defense Initiative in 1983. The treaty has stirred great debate within presidential administrations and the Congress regarding interpretation of words and

statements. In a "Clintonian" style, several opinions have resulted regarding what terms mean and whether the treaty should be interpreted from a "broad" perspective or a "narrow (more restrictive)" view. The purpose of Congress is to act as a debating body, so such arguments are healthy and to be expected. However, for the purposes of this paper, no 'wordsmithing' will be conducted and the ABM Treaty will be viewed at face value. Under such criteria, the thirty-year-old ABM Treaty will present a problem for the BMD system.

Article 1 of the treaty states that the United States and the Soviet Union will not "deploy ABM systems for a defense of the territory of its country". The BMD system does not comply with Article 1. LtGen Kadish states in his opening remarks during a briefing to the House Armed Services Committee that " the fundamental objective of the BMD program is to develop the capability to defend the forces and territories of the United States, its Allies, and friends against all classes of ballistic missiles." (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 1)

Article 2 defines what both nations considered as an ABM system and included its components:

> For the purposes of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, current consisting of (a) ABM interceptor missiles, which are interceptor missiles constructed and deployed for an ABM role, or of a type tested in an ABM mode; (b) ABM launchers, which launchers constructed and deployed for launching ABM interceptor missiles; and (c) ABM radars constructed and deployed for an ABM role, or of a type tested in an ABM mode.

There is no question about the fact that the current framework of the BMD system includes the production of interceptor missiles to engage strategic ballistic missiles, launchers for the interceptor missiles, and radars that will identify and track strategic ballistic missiles. It is an irrefutable fact that the BMD system will function as an ABM system.

Article 3, after the 1974 Protocol, stated that the United States was allowed to deploy an ABM system that protected ICBM silos. As previously mentioned, the United States selected Grand Forks, ND as its site location, but eventually closed it. The proposed BMD system is intended to protect much more than the Grand Forks, ND or

any other single ICBM location. It is expected to protect the entire nation and its territories from a ballistic missile attack.

Article 4 states that development and testing of ABM systems and their components is authorized, only if it is for the system agreed to in Article 3. It further states that tests must be conducted at "agreed test ranges". To amplify this, under the Agreed Statements portion of the treaty, section 2, Common Understandings, Part B, it identifies the acceptable U.S. ABM test ranges at White Sands, New Mexico and the Kwajalein Atoll. LtGen Kadish states the new test bed for the BMD system will:

> …make use of early warning radars at Beale Air Force Base and Cobra Dane at Shemya Island, and use of the Kodiak Launch Facility in Alaska to launch targets and interceptors. The test bed would also include up to five ground-based silos at Fort Greely, Alaska. (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 6)

Therefore, it is apparent that the new test bed will exceed the parameters set forth within the treaty as stated in Article 4.

Article 5 states that "each party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based." There has been a significant amount of debate over this Article because the term "develop". The road from concept/exploration to actual deployment is a long process. Therefore, many politicians have claimed that the term "develop" in Article 5 is ambiguous and does not draw a clear line in the sand that cannot be crossed. Gerald C Smith, the leader of the American delegation that negotiated the ABM Treaty, provides the following account of what he believes the American and Soviet delegations intended "develop" to mean:

> The prohibitions on development contained in the ABM Treaty would start at that part of the development process where field testing is initiated on either prototype or breadboard models. It was understood by both sides that the prohibition on 'development' applies only to activities involved after a component moves from the laboratory development and testing stage to the field testing stage, wherever performed…Exchanges with the Soviet Delegation made clear that this definition is also the Soviet interpretation of the term 'development'. (Senate Armed Services Committee, July 18, 1972)

The BMD system will directly conflict with the provisions of Article 5. LtGen Kadish states that the "new program will pursue a broad range of activities in order to aggressively evaluate and DEVELOP technologies for the integration of land, sea, air, or space based platforms to counter ballistic missiles in all phases of their flight." Additionally, the new test bed calls for " realistic flight-testing of capabilities in the Boost, Midcourse, and Terminal Segments." (LtGen. Ronald T. Kadish, Brief to the House Armed Services Committee, 2001, p. 3) Such flight tests cannot be conducted inside a laboratory. Therefore, it may be inferred that the development and testing of the BMD system will in violate Article 5.

Finally Article XV states that the treaty will have an unlimited duration. This implies that the United States must comply with the provisions of the treaty to protect its national integrity. Or, the United States may choose one of three options. The first option would be to propose an amendment to the treaty as described in Article XIV. An amendment would require Russia (because the Soviet Union no longer exists) to agree with the American proposal. The second option the United States could choose is to unilaterally withdraw from the treaty as stated n Article XV, which is allowable with six months notice and an explanation of extraordinary events that require the party to withdraw. The final option would be to ignore the treaty's provisions and proceed with development, testing, and deployment of the BMD system. However, such an option is not likely because it is undignified and would be disrespectful to a nation that is no longer an enemy, but instead becoming an ally.

D. CHAPTER SUMMARY

During the 1970's, national missile defense was placed on the back burner of defense issues. Once President Reagan took office in the early 1980s, he began to reexamine the MAD concept. Unhappy with the notion that America was left defenseless and vulnerable to a ballistic missile attack, President Reagan announced his intentions to begin researching the prospects of a NMD system. This program was called the Strategic Defense Initiative. It marked the Genesis of NMD in the post ABM Treaty years.

Over the next twenty years, the face of the world changed and new threats emerged. The Soviet Union dissolved and Third World countries began developing ballistic missile capability. This realization was demonstrated during the Gulf War when Iraq launched SCUD missiles on American forces. To meet the changing threats, each new president has reshaped the structure of the missile defense program. National missile defense has since gone through five different eras of evolution. Each president had the opportunity to call for the deployment of a NMD system, but all succumbed to the constraints of the ABM Treaty and left the United States vulnerable to a ballistic missile attack.

Since President Bush took office in January of 2001, he has aggressively pushed for a NMD system to be developed and eventually deployed. Together with the MDA, the Bush administration has proposed a new version of NMD, now called BMD. It is a layered defense system that utilizes open architecture. Its purpose is to provide protection against the emerging threats and allow the United States an opportunity to engage and defeat enemy ballistic missiles in all stages of flight. However, like previous systems, the BMD system conflicts with the provisions set forth in the ABM Treaty.

The extraordinary events of September 11, 2001 have brought the United States closer than ever to deploying a NMD system. To do so, President Bush must do one of three things: 1) ignore the ABM Treaty and proceed with development and deployment of the BMD system; 2) propose an amendment to the ABM Treaty with Russian agreement; or 3) unilaterally withdraw from the treaty. The United States is at the cross roads of missile defense. Now it is time for President Bush to choose which road would be best traveled and ultimately provide the United States with the security that the constitution demands its citizens are entitled to.

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V. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The signing of the Anti-ballistic Missile Treaty in 1972 fostered an agreement between the United States and the Union of Soviet Socialist Republics to leave themselves virtually unprotected against a strategic nuclear ballistic missile attack from each other. The resulting vulnerability was designed to perpetuate mutually assured destruction, thereby deterring each nation from ever wanting to engage in a nuclear war. Nearly thirty years have passed and the world has changed drastically. However, the United States is still bound to the treaty and left without a national missile defense system.

The primary purpose of this research was to examine the 1972 Anti-ballistic Missile Treaty between the Soviet Union and the United States of America and explore its impact on the procurement of a national missile defense system. It was designed to examine the treaty's utility with respect to changes in the geopolitical structure of the world and new emerging threats. The goal of this research was to determine whether or not the United States should continue to recognize the thirty-year-old agreement or abandon it, as President Bush is proposing, to procure a NMD system. This chapter presents the conclusions and recommendations derived from the analysis presented in the previous chapters.

B. GENERAL CONCLUSIONS

The founding fathers of the United States of America declared that in order to "secure the blessings of liberty to ourselves and our posterity," the Constitution of would require that the government "provide for the common defense" of its citizens. Furthermore, Section 4 of Article IV affirms, " the United States shall guarantee to every State in this Union" that it will "protect each of them against invasion." To clarify any ambiguity, Webster's dictionary defines an invasion to be "an intrusion or entering by an attacking military force" or "the onset or appearance of something harmful or troublesome." A ballistic missile attack on the United States would undeniably be

considered a harmful act. It would be the result of a military force or terrorist seeking to impose its will on American sovereignty, by strategically entering the territory of the United States (with a missile), in order to destroy the liberty and well being of its people. The following scenario is used to illustrate a real world possibility.

1. Scenario

An extremist, such as Osama Bin Laden, establishes relations with the Iranian government. The extremist has an exorbitant amount of wealth and seeks to purchase a single nuclear ballistic missile that is capable of being launched from a sea going vessel. The Iranian government offers to covertly sell a missile at a high price in order to supplement its week economy. The extremist agrees to pay the price and the transaction is completed.

The extremist and his organization have previously acquired a large cargo ship. Additionally, he has a crew that is fully prepared to carry out the mission at hand. In the crews' minds, their cause is just and a sure way to enter paradise. The newly acquired missile is loaded on board the vessel and it makes its way across the Atlantic. Once the vessel is 750 miles east of the American coastline, it stops. The crew prepares the missile and launches it toward its target: Washington D. C.

Once the missile has left the vessel, the crew momentarily celebrates its success and then immediately prepares to complete their mission. To wash away the trail of evidence, the crew detonates explosives that destroy the vessel and themselves…Their belief is that they have just become martyrs for their cause.

Within seconds of the launch, American Early Warning Radars detect the inbound missile. Once it is determined that the missile is not part of a drill or preplanned simulation, the imminent threat is passed up the chain of command…

Could such a scenario really occur? The answer lies at Ground Zero in New York City. A more important question might be the following: Is the United States currently capable of defending itself from such an attack?

On July 19, 2001, the Deputy Secretary of Defense, Paul Wolfowitz, gave testimony before the House Armed Services Committee. The following dialogue occurred between Congressman Duncan Hunter and Paul Wolfowitz. It illustrates the severity of the ballistic missile threat and ABM Treaty's undermining of American security:

REP. DUNCAN HUNTER (R-CA): If a ballistic missile was launched at an American city today, could we shoot down a single ballistic missile incoming to an American city?

MR. WOLFOWITZ: You know and I know, Congressman, but I think most of the American people don't realize that we have no capability whatsoever.

REP. HUNTER: Now with respect to the ABM Treaty, we all know---and the ABM Treaty is something that is kind of arcane to most Americans, but we all know that the ABM Treaty is an agreement that we will not defend ourselves against fast missiles. And we made that treaty with the then Soviet Union.

Mr. Secretary, does North Korea or China or Iraq or Iran have any legal obligation under the treaty we made with the Soviet Union not to kill either our troops or Americans in our cities with fast missiles? Are they obligated under the treaty?

MR. WOLFOWITZ: In no way whatsoever.

REP. HUNTER: Are all those nations developing fast missiles?

MR. WOLFOWITZ: Yes, and some of them have them already.

REP. HUNTER: Mr. Secretary, I think you have made a compelling statement.

2. Summation

This thesis concludes that the 1972 Antiballistic Missile Treaty is obsolete because 1) new threats have emerged that are not subject to the constraints of the treaty; 2) it prevents the United States government from procuring a viable national missile defense system to counter today's threats; 3) the Soviet Union no longer exists and the Cold War is over; and 4) it did not achieve the goal it was designed to accomplish.

C. SPECIFIC CONCLUSIONS

1. The ABM Treaty fails to address and constrain new ballistic missile threats that have emerged since 1972. The face of the world has changed drastically since the signing of the ABM Treaty in 1972. The nation that President Reagan called the "evil empire" no longer exists and the Cold War has been over for nearly a decade. A new period of cooperation now exists between the United States and the nations of the former Soviet Union. Instead, many new threats have emerged that were not yet born when President Nixon determined that the United States did not need a "national" missile defense system and entered the treaty.

Throughout the world, in East Asia, South Asia, and the Middle East/North Africa, the proliferation of nuclear and ballistic missile capability is occurring at an alarming rate. Nations that destabilize their regions and challenge American interests are developing or modernizing nuclear and ballistic missile programs. Specifically, China, North Korea, India, Pakistan, Iran, Iraq, Syria, and Libya all pose a direct threat to the United States with their ballistic development and proliferation of technology. Furthermore, terrorist organizations, that may or may not be known, will continue to seek the capability to attack the United States. As the Deputy Secretary of Defense Paul Wolfowitz stated, none of these nations or any terrorist organization are subject to the constraints of the ABM Treaty. Therefore, by continuing to abide by the outdated treaty, the United States leaves itself unprotected against a ballistic missile attack.

Based on the information presented in Chapter III of this research, the United States is now threatened by the ballistic missile capability and proliferation of ballistic missile technology held by many nations that did not have this ability in 1972. Furthermore, these nations were not included in the signing of the treaty and are not subjected to its implications and restrictions. Therefore, it may be concluded that the ABM Treaty fails to address and constrain new ballistic missile threats that have emerged since 1972.

2. The ABM Treaty prevents the United States from deploying a viable NMD system to counter current and future ballistic missile threats and leaves the nation vulnerable to a ballistic missile attack. Since 1972, new ballistic missile threats have emerged from China, North Korea, India, Pakistan, Iran, Iraq, Syria, and Libya. This realization was demonstrated during the Gulf War when Iraq launched SCUD missiles on American forces. To meet the changing threats, American Presidents, from Ronald Reagan to George W. Bush, have supported the development of a national missile defense program. Each president had the opportunity to call for the deployment of a NMD system, but all succumbed to the constraints of the ABM Treaty and left the United States susceptible to a ballistic missile attack.

Today, President Bush, in conjunction with the Missile Defense Agency, is proposing a layered defense system, called Ballistic Missile Defense, that could thwart incoming ballistic missiles targeting the United States. The president believes the BMD system would reduce America's helplessness against an attack and enhance national security. However, as Chapter 4 of this research illustrates, this system would unquestionably violate the ABM Treaty.

Under the conditions set forth in 1972, the ABM Treaty does not allow for the United States to ever deploy a missile defense system that would be capable of protecting the entire nation. By choosing to deploy the BMD system, despite the known violations it would incur, the United States would damage its national integrity amongst the nations of the world and set a very poor example. Therefore, it may be concluded that the ABM Treaty prevents the United States from deploying a viable NMD system to counter real threats that endanger the security of its citizens and ultimately leaves the United States vulnerable to a ballistic missile attack.

3. The ABM Treaty did not achieve the primary goal that President Nixon desired it to accomplish. In 1972, President Nixon was willing to sacrifice the United States' ability to ever deploy a national ABM system in order to accomplish his goal: to stop the Soviet expansion of its offensive nuclear capabilities. The ABM Treaty was intended to be a stepping-stone on the path of this process. However, it is clear that

the ABM Treaty did not accomplish the goal that President Nixon had in mind when he signed it. Both sides increased their nuclear arsenals and the arms race continued.

By 1985, the United States had 7,900 missile warheads, while the Soviet Union had 9,300. With respect to missile launchers, the United States had 1,028 ICBM launchers and 648 SLBM launchers. The Soviet Union had 1,398 ICBM launchers and 924 SLBM launchers. (McNamara 1986, 155) These numbers do not indicate a halt in offensive arms production by either nation. In fact they do not indicate even a gradual decrease. Instead, each side greatly increased its offensive nuclear weapons following the signing of the ABM Treaty and IOF agreement.

Fourteen years after the treaty was established, Richard Perle, the Assistant Secretary of Defense, stated:

> the Soviet forces grew beyond our most pessimistic expectations under the terms of the 1972 agreement…Secondly, to add insult to injury, the Soviets recognized in 1972 that they were behind in defensive technology and they greatly increased their investment in defensive technology. (Charlton, 1986, 114)

Based on the empirical data presented in Chapter 2 of this research, the ABM treaty failed to halt the Soviet offensive weapon buildup. Therefore, it may be concluded that the ABM Treaty failed to accomplish the goal established by President Nixon and nullifies his premise for signing the treaty.

4. The dissolution of the Soviet Union ended the arms race, Cold War, and the need for the ABM Treaty. Following World War II, the United States and the Soviet Union became engulfed in an arms race. Initially, the United States maintained a superior nuclear force. However, in the mid to late 1960s, a shift in the nuclear balance began to occur. The Soviet Union began to close the gap and threatened to surpass the United States in nuclear strength. The ABM Treaty was meant to act as a catalyst for arms reduction. Its purpose was to help stop the Soviet Union's expansion of its ballistic missile inventory.

In 1991, the Soviet Union ceased to exist as a sovereign nation. Its break up in erased the notional iron curtain that spanned across Europe and ended the Cold War.

Most importantly, it brought an end to the arms race and Soviet expansion of nuclear ballistic missiles. Furthermore, Russia is now making bold moves to westernize and is becoming more of friend than foe. This realization eradicates the context that set the stage for the signing of the treaty in 1972. The threat that acted as a catalyst for the SALT meetings and the eventual signing of the ABM Treaty is now a part of history. The dissolution of the Soviet Union accomplished what the ABM Treaty failed to do: it halted the build up of Soviet offensive nuclear weapons. As a writer for Time magazine put it:

> The arms race between us is over. The U.S. and Russia are not even aiming missiles at each other. They are aimed at seas, so that even an accidental launch would destroy only fish. The coming threat emanates from elsewhere, from small, determined outlaw states such as North Korea, Iran, and Iraq. And before that threat, we are helpless. (Krauthammer, 1994, p. 74)

Based on the information presented in Chapter 3 of this research, it may be concluded that the threat of Soviet nuclear offensive weapon expansion, which the ABM Treaty was meant to curb, no longer exists. Additionally, the relationship between Russia and the United States has greatly improved since the Soviet Union's dissolution. Therefore, it may be concluded that the ABM treaty is archaic, outdated, and obsolete.

D. GENERAL RECOMMENDATIONS

The conclusions of this research suggest that there is no further utility in the ABM Treaty as it is currently written. Both the United States and Russia would profit from moving beyond the Cold War relic. Today's multi-threat environment should persuade both nations to reexamine bi-polar strategies that degrade their ability to provide security for their citizens. As Russia continues to stretch its soul by reaching to the west for guidance and aid, the United States should actively seek to lend a helping hand. The opportunity is here for two old foes to learn from the mistakes of the past and create a new path for the future. Mistrust should be replaced with mutual temperance and cooperation. President Kennedy once stated, "We have come to far, and sacrificed too much, to disdain the future." Clearly, both the United States and Russia have suffered from the forty-year chess match, but now benefit from reduced tensions brought on by

the end of the Cold War. Now each side should commit to a new era of interoperability and seek to never return to the days of old. History has foretold the evolution of the American/British saga. The United States and England once fought as bitter enemies in a revolution. Now both nations act like brothers who are separated geographically, but remain bonded through all the trials of life. English sailors would no longer board American ships to steal its sailors to serve in the Royal Navy. Therefore, the Jay Treaty is no longer relevant. The United States and Russia should pursue the same type of kinship. Furthermore, both nations should seek to walk down a path that promotes global stability wherever possible. Keeping this in mind, the United States and Russia must also be afforded the opportunity to provide for self-defense against new emerging threats. It is within this context that I recommend that the ABM Treaty be dissolved.

E. SPECIFIC RECOMMENDATIONS

Based on the findings and conclusions drawn from this research, the following statements are made as recommendations:

1. The United States should strongly urge Russia to jointly dissolve the ABM Treaty and pursue a cooperative global missile defense plan. Although this would be a drastic shift from past strategies, it would promote an incredible opportunity for the two nations to proceed toward reliance, instead of defiance. The space station has proven that both countries can work together to achieve a common goal. By jointly producing a global missile defense that focused on striking missiles during their boost phase, each nation would do its part to enhance global stability and forge a path that incorporates cooperation.

2. The United States and Russia should pursue the development and deployment of individual national missile defense systems. Every sovereign nation has an obligation to its citizens to provide for a national defense. Given today's threats, including barbaric acts displayed by terrorists, the United States and Russia should eagerly make efforts to develop and deploy their own national missile defense system in addition to pursuing the production of a joint global system.

3. The United States and Russia should continue to pursue arms reductions. By doing so, both nations would promote anti-proliferation. Furthermore, it would provide a road to achieving parity, mutual trust, and global stability. Consequently, each nation would have more motivation to produce a joint global missile defense.

4. In the event that Russia does not pursue recommendations 1, 2, and 3, then the United States would be justified to unilaterally remove itself from the ABM Treaty; and should do so. The extraordinary events of September 11, 2001 indicate the seriousness of emerging new threats and qualify as reason enough for the United States to exit the treaty under the criteria listed in Article XV. Furthermore, there are many nations that now pose a ballistic missile threat to the United States that did not in 1972. The United States has become a target and must be able to protect itself from attacks of any kind, from anyone who wishes to harm her people. This research has illustrated that the ABM Treaty is outdated and leaves the United States vulnerable to a ballistic missile attack. Therefore, the United States must be free to develop a viable NMD system to counter today's threats. The American citizens want to be protected and the Constitution demands it.

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